

# PLAYGUARD<sup>®</sup>

SAFETY SURFACING



## PLAYGUARD<sup>®</sup> 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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## Base Preparation

### I. GENERAL INFORMATION

PlayGuard® playground safety surface tiles and accessories by Ecore can be installed on concrete, asphalt, wood or loose base surfaces, except for limitations noted herein.

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

**NOTE:** 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. No labor claim will be honored on material installed with visual defects.

	Interior		Exterior	
Surface	24" x 24" x 2-1/2"		24" x 24" x 2-1/2"	
	Quad Blok <sup>1</sup>	Full Glue <sup>1,2</sup>	Quad Blok <sup>1,4</sup>	Full Glue <sup>1,2</sup>
Concrete Surface	Approved	Approved	Approved	Approved
Asphalt Surface	Approved	Approved	Approved	Approved
Plywood	Approved	Approved	Approved	No
Compacted Gravel <sup>3</sup>	Approved	No	Approved	No
Wood or Tile	Approved	No	Approved	No
Resilient Flooring	Approved	No	Approved	No
Rubber Roofing <sup>4</sup>	N/A	N/A	Approved	No
Please note:				
1. Tile must always be glued to top of Quad Blok				
2. "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.				
3. Compacted Gravel sub-base may experience movement and subsidence; sub-base out-of-flatness, movement, subsidence, etc. are warranty exclusions.				
4. Only adhere tile to Quad Blok connector; do not glue Quad Bloks or Tiles to the roof.				

## 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 down-grade side of the site, as appropriate.
2. Provide for drainage system to eliminate standing water.

## IV. BASE OPTIONS

### A. Hard Base Construction

3. Concrete Base
  - a. Minimum compressive strength of 3000 psi, cured for a minimum of 28 days before installing tiles.
  - b. If outside, provide a minimum slope equal to 1" per 10' of run toward drain or down-grade side of site, with base free of depressions that would pond water.
  - c. If inside, provide base flat to the equivalent of 3/16" (4.8 mm) in 10' (3.0 m). A light broom finish is best if fully adhering the tiles.

4. 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 cure for 28 days before adhering PlayGuard tiles.

B. Compacted Loose Base Construction

- 1. In outdoor areas or areas with no walls or confines, a perimeter footer will need to be constructed to contain the compacted base and stone dust.
- 2. Excavate approx. 9 inches of soil below the required finished tile level. Prepare approx. 6 inches of compacted, crushed stone followed by one inch of stone dust on top. Allow for a 1" in 10 LF slope for moisture movement to drainage pit as applicable. Some bases may require a perforated drainpipe to remove moisture build-up.
- 3. By adding additional stone 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. The crushed stone 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

5. Cover the entire stone dust area with geo-textile fabric, including the top of the footer if the PlayGuard tile extends over the footer. Overlap successive geo-textile sections a minimum of 4". The geo-textile should be permanently adhered to the top of the entire footer on all sides.

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

## 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. 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.
- C. 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 (adjusted) perpendicular chalk lines meet.

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

### 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 to the roof.**

### III. FULLY ADHERED INSTALLATION

- A. **NOTE: Fully adhered installation method is NOT permitted over Poly Foam or rubber roofing**
- 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.

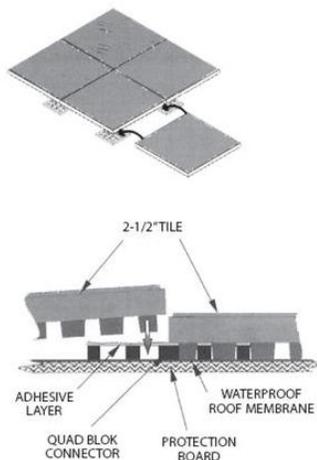
IV. QUAD BLOK INSTALLATION

- A. **NOTE:** Quad Bloks are required over Poly Foam
- B. Follow the Site Layout instructions.
- 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 axis of all Quad Blok connectors. Insert tile into Quad Blok **WHILE ADHESIVE IS STILL WET**. 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.

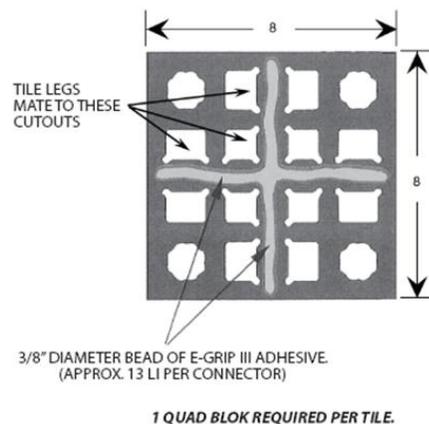
**NOTE:** Cut Quad Blok connectors in half to secure tile at the perimeter edge of surface area.

- 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 Bloks.

1. Typical Tile Field Placement



2. Connector Detail



V. POLY FOAM PAD INSTALLATION (UNDER PLAYGUARD TILE AND QUAD BLOK)

**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 both the **2-1/2"** PlayGuard tile and **Quad Bloks**

- A. Sweep area clear of all dust and loose debris.
- B. Determine starting point for the first course of the 39-1/16" x 90-9/16" x 2-1/4" thick PlayGuard Poly Foam Pad. For irregular configurations, the best starting point is often in the center to ensure a symmetrical finish for tiles that require trimming along the perimeter. 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 rough substrate surfaces. Insure that there are no gaps between the PlayGuard Poly Foam pad sheets. Rough substrates or windy conditions may require weighing down the Poly Foam pads 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 2-1/4" 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. Use a heavy-duty utility knife and a straight edge for a clean, neat surface cut followed by a saber saw using a 7-10 TPI wood cutting blade to finish cutting. Silicone spray lubricant can make cutting easier. Consider using a band saw on larger jobs.
- C. It may be necessary to cut tiles to fit around the play equipment supporting posts. Make the cutout approximately 1/4" larger in all dimensions than the support to prevent binding of the tile around the support. Voids between the equipment supports and tile cuts should be filled in with silicone urethane sealant or adhesive.

- D. Lay out tile cuts out by referencing dimensions from the edges of tiles already in position, and then transfer these dimensions to the tile to be cut.
- E. A lead-in cut is made from the tile edge to the portion to be cut and is usually the shortest distance from the cutout area to a tile edge or one that is less noticeable.
- F. Miter cut the reducers installed at the corners for the correct fit.

**Maintenance**

<b>Steps</b>	<b>Cleaning Products</b>	<b>Dilute</b>	<b>Brush/ Pad</b>
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. ***Use care to 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) scrubber with circular brush / pad attachment
<b>Auto Scrubber</b>	Unit with clean water rinse, wet vacuum pickup and wand pickup nozzle extension
<b>Cold Water Pressure Washing Unit</b>	<ul style="list-style-type: none"> <li>• Capacity: 3-4 gallons per min.</li> <li>• Pressure: 1300 psi</li> <li>• Recommended 40° wash nozzle.</li> <li>• Quick disconnect trigger gun extensions</li> </ul>
<b>Wet/Dry Shop Vacuum Unit</b>	<ul style="list-style-type: none"> <li>• Tank Capacity: 10-25 gallon</li> <li>• Extension wand, 12-inch pickup nozzle</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, sub-base failure, 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 applications other than children's playgrounds or adult pedestrian rooftop & patio use requires prior written approval by Ecore Technical Services.

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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