Max Playground Tiles

Installation Guide

Base Preparation

Installation

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Max Playground Tiles Installation Guide - continued

Base Preparation

I. GENERAL INFORMATION

Max playground safety surface tiles and accessories can be installed on concrete, asphalt, wood, or compacted gravel 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.

Surface	**Interior 24" x 24" x 2-1/2"**		**Exterior 24" x 24" x 2-1/2"**	
	Quad Blok Only 1	Quad Blok + Full Glue 1,2	Quad Blok Only 1,4	QuadBlok + Full Glue 1,2
Concrete Slab	Approved	Approved	Approved	Approved
Concrete Pavers	Approved	Approved	Approved	No
Asphalt Surface	Approved	Approved	Approved	Approved
Plywood	Approved	Approved	Approved	No
Compacted Gravel 3	Approved	No	Approved	No
Wood or Tile	Approved	No	Approved	No
Resilient Flooring	Approved	No	Approved	No
Rubber Roofing 4	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.

REQUIRED TOOLS/ MATERIALS

1. 1/8" square notch trowel (exterior)
2. Safety glasses
3. Saber saw (Jig saw) or band saw
4. 100-pound floor roller
5. Cutting table (shipping pallet)
6. Chalk Line
7. Utility knife and blades
8. Framing square/metal straight edge
9. Standard size caulk gun
10. Mineral spirits / denatured alcohol
11. Tape Measure
12. Solvent safe rubber gloves
13. Saber saw blades (7-10 TPI, wood type)

II. SITE WORK

A. Site Elevation

1. On grade installation - The finished installed height of the tile 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 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 8 feet 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.

III. BASE OPTIONS

A. Hard Base Construction

1. Concrete Base
   a. Minimum compressive strength of 3000 psi, cured for a minimum of 28 days.
   b. 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.
   c. If outside, provide a minimum slope equal to 1” per 8 feet of run toward drain or down-grade side of site or as specified.
2. Paved Asphalt Base
   a. Coarse 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 inch	100
3/8 inch	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 the 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 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 inch	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 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.

C. Radiant Heat

1. 2-1/2” tiles are not recommended over radiant heat as the tiles have an R-1 per inch of thickness, resulting on an approximate R-Value of R 2-1/2. Check with radiant system heat manufacturer for suitability. Turn off heat and maintain slab at 65F for 48 hours before, during and 48 hours after installation. Then bring radiant heat temperature up gradually.

IV. MATERIAL STORAGE AND HANDLING

A. Shrink wrap is to secure and stabilize material on pallet during shipment only. Please remove Shrink wrap from pallet immediately upon receipt, as damage to material could result from not doing so. After removing shrink wrap, do not expose material to sunlight. Store appropriately inside and securely cover and protect until installation.

B. Inspect all material for visual defects before beginning the installation. Verify the material delivered is the correct type, thickness, and amount. Report any discrepancies immediately. The manufacturer will honor no labor claim on material installed with any visually apparent defects.

C. The material and adhesive must be acclimated at room temperature for a minimum of 48 hours before starting 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. 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 and balance the tiles side-to-side in the space to not end up with small cuts of tile against the walls. Begin installation where the two (adjusted) perpendicular chalk lines meet. The last row will most likely have to be cut to fit.

NOTE: Trimmed / partial tiles may require additional site-engineered support underneath.

II. GENERAL INFORMATION

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. If fully adhering tiles on an **interior** installation, moisture must be measured using the RH Relative Humidity test method per the ASTM F2170 test standard. Moisture content should not exceed the allowable limit of the selected, approved adhesive. The selected Portland-based patching and selfleveling materials must be moisture resistant and rated to withstand the RH moisture levels on the project.

a. E-Grip III – RH limit of 85% – normally selected
b. E-Grip 95 – RH limit of 95% – higher RH applications
c. E-Grip 99 – RH limit of 99% – highest RH applications

If RH levels exceed the selected, approved adhesive's RH limit, stop and correct situation.

If outside, simply use E-Grip III

C. In the event that a moisture mitigation system is required, it must conform to the ASTM F3010 Standard Practice for Two-Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.

D. Perform pH tests on all interior concrete floors per ASTM F3441 Testing Concrete pH for Resilient Flooring. If greater than allowable limit of selected adhesive, neutralize prior to installation.
E. The tiles, accessories, and substrates must be dry before, during, and 24 hours after the application of adhesive. 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.
F. Using a 1/8” square-notched trowel, apply the E-Grip III adhesive slightly wider than the tile being placed. Do not spread more adhesive than can be covered in 30 minutes. 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.
G. Place tile into the fresh adhesive bed following pre-established lines. If applicable, place ramps into the fresh adhesive in a similar manner.
H. Allow 24 hours for adhesive to cure before opening area for use.

IV. QUAD BLOK INSTALLATION

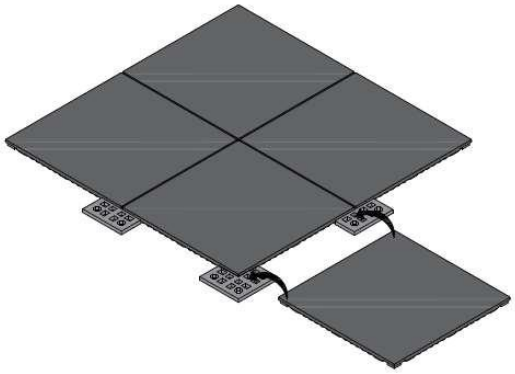
A. NOTE: Quad Bloks are required over Poly Foam
B. Follow the Site Layout instructions.
C. Once chalk lines are established, place the first tile at the intersection of two chalk lines, aligning adjacent edges of the tile with the chalk lines.
D. Apply a continuous 3/8" diameter bead of E-Grip III adhesive along the center axis of all Quad Blok connectors. Insert tile into Quad Blok WHILE ADHESIVE IS STILL WET. Adhesive open / Working 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.

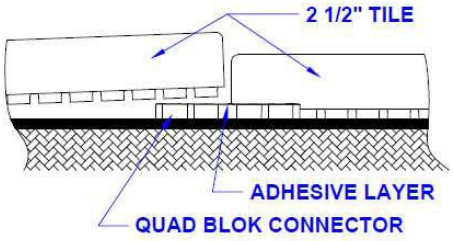
NOTE: Cut Quad Blok connectors in half to secure tile at the perimeter edge of surface area.

F. Complete the other three quadrants of the roof deck in a similar fashion.
G. Depending on workforce 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.
I. One 10.1-ounce tube of E-Grip III is required for approx. 10 of the 8" x 8" Quad Bloks.

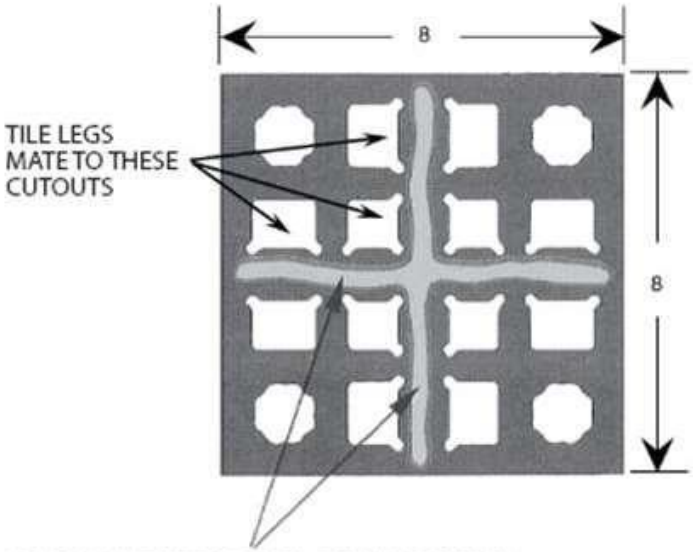
NOTE: Do not allow adhesive to cure on your hands or the flooring; it is very difficult to remove and we strongly suggest wearing gloves.

NOTE: Immediately wipe off excess adhesive from floor with a rag dampened with mineral spirits or denatured alcohol and immediately remove the mineral spirits/ denatured alcohol with a rag damp with water. Use mineral spirits / denatured alcohol sparingly!





TYPICAL TILE FIELD PLACEMENT



1 QUAD BLOK REQUIRED PER TILE.

V. POLYFOAM PAD INSTALLATION (UNDER TILE AND QUAD BLOK)

CAUTION! Please note:

1. Quad Bloks must be used when installing over Polyfoam
2. The **top** of the Polyfoam pad is covered with fabric.
3. **Plan ahead!** Position the Polyfoam (cut if necessary) so the edges of the tile, **do not line up with an edge of a Polyfoam pad** section.
4. The Polyfoam pads are only to be used with both the **2-1/2"** 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 Polyfoam. 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, apply E-Grip III adhesive with a 1/8" square notched trowel to a 6" x 6" area at each of the 4 bottom corners of every 39-1/16" x 90-9/16" Polyfoam pad and adhere to concrete. Extra adhesive may be necessary over rough substrate surfaces. Place the Polyfoam pads tightly against each other. Rough substrates or windy conditions may require weighing down the Polyfoam pads until the adhesive develops a firm set.

NOTE: The top of the Polyfoam pad is covered with fabric.
NOTE: Do not allow adhesive to cure on your hands or the flooring; it is very difficult to remove and we strongly suggest wearing gloves.

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 foam pad, begin by following the Site Layout Installation Instructions to prepare the site for the installation of 2-1/2" 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. Reducers should be miter cut for the correct fit at the corners.

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