

Ecore Athletic RageTurf dBTile Technical Manual

Installation · Maintenance · Warranty

Revised on 03Mar2021 Supersedes all previous versions Check website for updates.



Manufactured in the U.S.A. by:



Base Preparation

General Information 2

Tools / Material Required 2

Installation

Site Work & Base Options 3

Quad Blok Installation 5

Cutting Tiles & Accessories 6

Fully Adhered Installation 6

Maintenance

Maintenance 7

Warranty

Warranty 9

Installation

I. GENERAL INFORMATION

Ecore Athletic RageTurf dBTile can be installed on Sub-base / Surface per table below.

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.

NOTE: Slight variance in shade 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 or shade variations.

	Interior		Exterior	
Sub-base / Surface	24" x 24" x 2-1/2"		24" x 24" x 2-1/2"	
	Quad Blok Only ¹	Full Glue ^{1,2}	Quad Blok Only ¹	Full Glue ^{1,2}
Concrete Surface	Approved	Approved	Approved	Approved
Asphalt Surface	N/A	N/A	Approved	Approved
Plywood	Approved	Approved	Approved	N/A
Compacted Gravel ³	N/A	N/A	Approved	N/A
Wood or Tile	Approved	Approved	Approved	N/A
Resilient Flooring	Approved	Approved	Approved	N/A
Rubber Roofing ⁴	N/A	N/A	Approved	N/A
Please note:				
1. Tile must always be glued to top of Quad Blok				
2. "Full Glue" requires full spread adhesive using 1/8" square notch trowel. Bond test is recommended; installer responsible to determine suitability.				
3. Compacted Gravel sub-base may experience movement and subsidence. Subbase 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. Two tape measures, 25' and 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) |

II. SITE WORK

A. Site Elevation

1. On grade installation - The finished installed height of the RageTurf dBTile 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 Tile 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.

III. BASE OPTIONS

A. Hard Base Construction

1. Concrete Base

- a. Minimum 3000 psi and cured for a minimum of 28 days before installation. A light broom finish is best if fully adhering the tiles.
- b. If outside, provide a minimum slope equal to 1" per 10' of run toward drain or down-grade side of site, flat to the equivalent of 3/16" (4.8 mm) in 10' (3.0 m).
- c. If inside, provide base flat to the equivalent of 3/16" (4.8 mm) in 10' (3.0 m).
- d. If **inside and requiring full adhesion to concrete**, concrete RH (relative humidity) must be measured per ASTM F2170. Moisture content should not exceed the allowable limit of the selected Ecore adhesive.

E-Grip III – RH limit of 85% – normally selected

E-Grip 95 – RH limit of 95% – higher RH applications

E-Grip 99 – RH limit of 99% – highest RH applications

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

If outside, simply use E-Grip III

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.

Perform pH tests on all concrete floors. If greater than the allowable limit of the selected Ecore adhesive, neutralize prior to installation.

1. Paved Asphalt Base

- a. Provide min. slope of 1" per 10' of run toward drain or down-grade side, with base flat to the equivalent of 3/16" (4,8 mm) in 10' (3,0 m). Light broom finish is best if fully adhering tiles.

- b. The preferred aggregate size is 3/8" to 1/2". Asphalt mixtures that contain a high percentage of fines may not be stable in hot weather and may become soft.
- c. The soil subgrade must be compacted with a min. 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 min. 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).
- d. New asphalt surfaces should be allowed to cure for 28 days before adhering tiles.

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

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.

IV. SITE LAYOUT AND DETERMINING TILE INSTALLATION STARTING POINT

- 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 are not straight or corners square, tile installation generally starts in the middle of the room, so 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 side-to-side so you don't end up with small cuts of tile against the walls.
- D. Place the first tile's edges where the (adjusted) two perpendicular chalk lines meet.
- E. The last row of pavers will most likely have to be cut to fit.

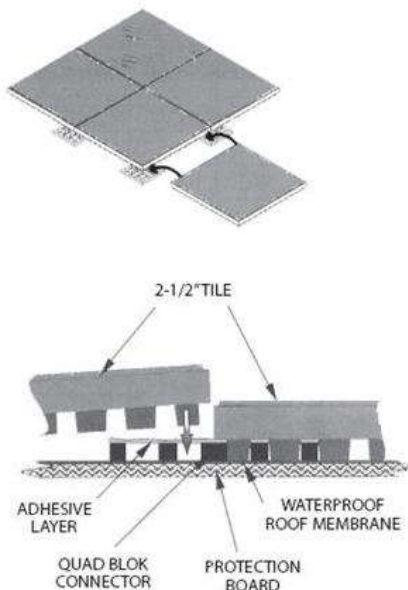
V. QUAD BLOK INSTALLATION

- A. Quad Blok installation is the most efficient method of installation.
- B. Follow the Site Layout instructions to prepare area for installation. Once chalk lines are made, , place first tile at intersection of two chalk lines, aligning adjacent edges of tile with chalk lines.
- C. 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.
- 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 openings in the Quad Blok. Continue to sequentially lay the tile and to set the Quad Bloks along one chalk line until the first course of tile is complete.

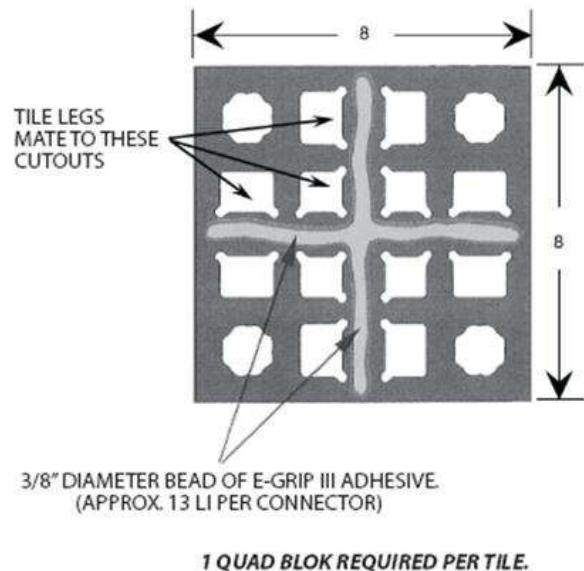
NOTE: In the field, cut the Quad Blok connectors in half to properly secure tile around the perimeter edge of surface area.

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



VI. CUTTING TILES & ACCESSORIES

- A. Tile cuts are best started with a retractable razer knife to cut the surface, finished with a saber saw and a 7-10 TPI wood cutting blade. Blade must be long enough to penetrate tile.
- B. Follow the Quad Blok Installation Instructions to prep site to install tile and Quad Blok connectors.
- C. Avoid leaving a cut edge of a tile exposed to foot traffic or eyesight. For a finished appearance, any tile that has its factory molded edge removed or cut for any reason should be positioned against a wall or other vertical member. Use either a silicone sealant or a permanently elastic urethane sealant/adhesive for filling any gaps between cut edges and walls.
- D. A band saw can be used on larger jobs. Consider using silicone spray to reduce friction and blade from binding.
- E. When equipment must be bolted to the substrate below tiles, notch out tiles as required to fit tiles around the equipment support posts
- F. Tile cutout should be approx. ¼" larger on all sides of support it will surround to prevent binding between tile and support. Fill cutout voids with silicone sealant or a permanently elastic urethane sealant/adhesive.
- G. Lay out the tile cuts by measuring from the edges of tiles already in position and transfer dimensions to tile to be cut.
- H. Extend a lead-in cut line from the tile edge to the portion to be cutout. The lead-in cutting line should either be the shortest distance from the cutout to a tile edge or one that is least noticeable.
- I. Reducers installed at the corners should be miter cut to fit.

VII. FULLY ADHERED INSTALLATION

- A. Use 1/8" square notch trowel.
- B. Quad Bloks are recommended for fully adhered installations for ease in keeping corners aligned and tile lines straight; include the 3/8" bead of adhesive per the Connector Detail diagram above.
- C. If **inside and requiring full adhesion to concrete**, concrete RH (relative humidity) must be measured per ASTM F2170. Moisture content should not exceed the allowable limit of the selected Ecore adhesive.
 - 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 Ecore adhesive's RH limit, stop and correct situation.

If outside, simply use E-Grip III

- D. 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.
- E. Perform pH tests on all interior concrete floors. If greater than the allowable limit of the selected Ecore adhesive, neutralize prior to installation.

Maintenance

The following procedures are key in helping to preserve your turf:

I. Keep it clean

1. Dust, pollen, and airborne pollutants

For lightly soiled areas, it may be necessary to use a rectangular microfiber mop with three (3) ounces of E-Cleaner per gallon of water. For heavily soiled areas, repeat procedure using a three (3) percent solution of household ammonia in warm water followed by a thorough rinsing with warm water. A wet vacuum can be used to remove excess water from the surface.

2. Stains and other blemishes

The first rule is promptness. It is always easier to clean up a fresh spill than one that has dried and hardened. Remove any solid or paste-like deposit with a spatula or table knife. Blot up excess liquids with paper towels, a clean cloth, or a dry absorbent, such as kitty litter or fuller's earth. Dry absorbents can then be vacuumed up afterwards.

Synthetic fibers have high resistance to staining. However, it is important to realize they are only one part of a sophisticated system of various components designed for overall performance. Some cleaning agents safe for the face fibers can be harmful to other components of the turf system. Therefore, cleaning agents are grouped into two sets, one of which can be used in liberal amounts directly on the turf surface, and the second of which should only be applied by rubbing a cloth lightly soaked in the cleaner in order to minimize penetration of possible harmful agents below the turf surface.

In the **first group of cleaners** which generally can be applied without any special precautions are the following:

- A warm, mild solution of granular household detergent or any low sudsing detergent for fine fabrics. Use approximately one teaspoon to one pint of water. This will handle most waterborne stains including:

Coffee	Cola	Tea	Blood
Ketchup	Milk	Ice Cream	Urine
Mustard	Cocoa	Butter	Dye
Fruit juices	Vegetable juices	Glue	Latex paint

- A three (3) percent solution of ammonia in water may be used in lieu of household detergent for more stubborn stains.
- Do not use cleaners that contain chlorine bleaches or caustic cleaners (pH above 9) or highly acidic cleanses (pH below 5). Use only neutral cleaners such as E-Cleaner provided by ECORE Athletic.
- Rinse area thoroughly with clean warm water to remove any traces of soap or ammonia
- Blot up excessive liquid.

The **second group of cleaners**, where agent must be applied sparingly and care taken to avoid penetration beneath the turf are the following:

- Mineral spirits or a grease spot remover like perchlorethylene (dry cleaning solution) of the type sold by most variety stores and supermarkets. In general, cleansers in this category should handle most oil-based stains including:

Asphalt	Motor oil & grease	Chewing gum	Lipstick
Tar	Suntan oil	Crayon	Nail polish
Shoe polish	Cooking oil	Ballpoint ink	Floor wax

Caution: Mineral spirits and other petroleum-based solvents are flammable. Do not smoke or permit open flames near where these are being used. Be sure the area is well ventilated where solvent cleaners are used and remember to use sparingly.

3. Animal waste

Neutralize with mixture of white distilled vinegar in an equal amount of water. Flush thoroughly with water after application. And vacuum up excess solution with a wet vacuum.

4. Chewing gum

In addition to dry cleaning fluid, chewing gum can be removed by freezing. Aerosol packs of refrigerant are available from most carpet cleaning suppliers for this purpose, or dry ice can be used. After freezing, scrape with a knife.

5. Fungus or mold spots

A one (1) percent solution of hydrogen peroxide in water can be sponged on to the affected area. Flush thoroughly with clean water after application.

II. Periodic brushing

1. Matting of fibers may occur in areas of high foot traffic, especially if fibers have become soiled with dirt and other airborne pollutants.
2. Periodic “cross brushing” of the turf can help restore its aesthetic appearance. “Cross brushing” means all brushing activity takes place against the grain, nap, or sweep of the turf fibers. By brushing against the turf, the fibers are “fluffed up”. A brush with synthetic bristles should be used. Never use a brush with metal or wire bristles as these will change the turf fibers.

III. Do not abuse

Although turf is made of tough, durable fibers, certain precautions should be taken to prevent any damage.

- Lighted cigarettes cannot ignite the turf, but permanently damage the turf.
- Furniture & equipment with sharp or jagged edges may puncture or tear the turf.
- Sprinkler or hard water can leave mineral deposits that may cause discoloration.
- Heat from reflected sunlight may fuse the turf fibers together.

Minor problems can become major problems quickly if not corrected. The proper care and maintenance program can enhance the aging, usefulness, and aesthetics of the turf.

Warranty

Ecore (the “Seller”) warrants that the RageTurf dBTile surface will be free from defects in materials and workmanship.

- Surface wear: ordinary abrasion from pedestrian traffic will not penetrate wear course of surface.
- The tiles, when installed according to the manufacturer’s specifications, will ensure the surface remains fixed and functional.
- This is a 5-year limited warranty, prorated as outlined in the warranty coverage schedule shown below. This warranty may be transferred with the property.
- Any segment of the RageTurf dBTile Tile surface that meets the warranty criteria will be repaired or replaced, at the Seller’s option and in conjunction with the warranty coverage schedule below.
- A warranty claim should be made directly to the Seller. Please provide: description of the claimed defect, the date the defect was discovered, sales order number, photographs of the claimed defect, the date of the original installation, the project name, and your name, address and phone number. The Seller will provide notification of any additional information and physical evidence that may be required to process your claim.
- The Seller shall be responsible for 100% of the purchase price of any product found to be defective or not in compliance with the warranty herein within the first year following the original shipment of the product. After the first year following the original shipment of the product, the Seller shall only be responsible for a portion of the cost of purchase price of such products as follows (and the buyer shall bear and pay the remaining portion of such costs):

<u>Number of years from date of original shipment to date of claim</u>	<u>Percentage of purchase price of product for which Seller is responsible</u>
<i>Up to 1 -----</i>	<i>100%</i>
<i>More than 1 and up to 2 -----</i>	<i>60%</i>
<i>More than 2 and up to 3 -----</i>	<i>40%</i>
<i>More than 3 and up to 4 -----</i>	<i>30%</i>
<i>More than 4 and up to 5 -----</i>	<i>20%</i>

Warranty Exclusions – This warranty does not cover:

- Differential fading due to light exposure, shading, pile crush, dye lot differences and soiling.
- Material installed with visible defects.
- Damage from any use for which the product was not designed, including weight drops or sleds or carts (pulling, pushing, or dragging, rope-pulled objects) etc.
- The exact matching of shade or color.
- Any express or implied promise made by any salesperson or representative.
- Tears, burns, cuts or damage due to improper installation, improper use or improper cleaning agents or maintenance methods.
- Labor costs for installation of original or replacement material.
- Sale of “Remnants”, “Seconds”, “Off Goods” or other irregular (non-first quality) flooring materials. With respect to “Seconds”, “Off Goods”, or “Remnants” such are sold “as is,” and Ecore makes no warranties whatsoever, express or implied with respect thereto, including warranties of merchantability or fitness for a particular purpose.
- Problems caused by moisture, hydrostatic pressure, or alkali in the sub-floor.
- Problems caused by uses, maintenance, and installation that are contrary to product specifications, recommendations or instructions.

- Sub-base failure or compacted gravel sub-base out-of-flatness, movement, subsidence, etc.
- Material that is not installed and maintained as recommended by Ecore.
- Damage to flooring products from pallet jack and tow-motor or vehicular traffic.
- Environments where the product will be exposed to animal fats, vegetable oils, grease or petroleum-based materials. (i.e.: commercial kitchens or auto repair facilities.)
- Premature wear and deterioration from spikes or natural grass cleats.
- Differences in color between products and photography.

Additional Considerations:

- The Seller's liability is limited to the material and transportation costs of repair or replacement of the product at the Seller's option. The Seller shall be responsible for installation costs and the costs of other work in connection with such repair and replacement only if such work was performed by Seller in the original installation. Where installed only in high traffic areas or installed in combination with other surfacing products not sold by the Seller, such tiles are excluded from this warranty.
- In the event of repair or replacement under this warranty, the warranty applicable to the replacement material or to the repaired products will extend only for the time remaining under the original warranty.
- The Seller reserves the right to discontinue or change any design or color of any products at any time and without notice or liability. If, for any reason, products of the type originally purchased are no longer available at the time a warranty claim is made, Seller may substitute another product determined by Seller to be of comparable quality and price.
- Your exclusive remedy for any breach of warranty is as set forth in this warranty. This warranty gives you specific legal rights. You may have other rights which vary from state to state and province to province. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



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