



RageTurf NIL Technical Manual

Installation • Maintenance • Warranty

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Supersedes all previous versions.
Check website for updates.

Manufactured in the U.S.A.

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I. JOB SITE CONDITIONS

1. Installation should not begin until after all other trades are finished in the area. If the job requires other trades to work in the area after the installation of the floor, the floor should be protected with an appropriate cover.
2. Areas to receive flooring should be weather tight and maintained at a minimum uniform temperature of 65°F (18°C) for 48 hours before, during, and after the installation.
3. NIL Turf is suitable for exterior use.
 - a) Additional care must be taken when installing it outdoors. Varying temperatures may cause rubber and turf to expand or contract before the adhesive cures.
 - b) Provide slope equal to 1" per 8 feet of run to eliminate standing water.

II. SUBFLOORS

1. RageTurf NIL may be installed over concrete, Portland-based patching, leveling materials, wood and vulcanized composition rubber.

NOTE: The selected Portland-based patching and self-leveling materials must be moisture resistant and rated to withstand the RH moisture levels on the project.

NOTE: Gypsum-based patching and leveling compounds are not acceptable.

2. **Concrete Floors** – Concrete shall have a minimum compressive strength of 3000 psi. New concrete slabs should cure for a minimum of 28 days. It must be fully cured and permanently dried.
3. **Wood Floors** – Wood subfloors should be double construction with a minimum thickness of one inch. The floor must be rigid and free from movement with 18" of well-ventilated air space below.
4. **Underlayments** – The preferred underlayment panel is American Plywood Association (APA) underlayment grade plywood, minimum thickness of 1/4" with a fully sanded face.

NOTE: Particleboard, chipboard/OSB, Masonite, and lauan are not considered to be suitable underlayments.

5. **Vulcanized Composition Rubber (VCR)** – Must be fully adhered to subfloor
6. **Radiant Heat** – RageTurf NIL suitable over radiant heat when fully adhered.

III. SUBFLOOR REQUIREMENTS AND PREPARATION

1. Subfloors shall be dry, clean, smooth, level, and structurally sound. They should be free of dust, solvent, paint, wax, oil, grease, asphalt, sealers, curing and hardening compounds, alkaline salts, old adhesive residue, and other extraneous materials, according to ASTM F710.
2. Subfloors should be smooth to prevent irregularities, roughness, or other defects from telegraphing through the new flooring. The surface should be flat to the equivalent of 3/16" (4.8 mm) in 10' (3.0 m).
3. Mechanically remove all traces of old adhesives, paint, or other debris by scraping, sanding, or scarifying the substrate. Do not use solvents. All high spots shall be ground level and low spots filled with a Portland-based patching compound.
4. All saw cuts (control joints), cracks, indentations, and other non-moving joints in the concrete must be filled with a Portland-based patching compound.
5. Expansion joints in the concrete are designed to allow for expansion and contraction of the concrete. If a floor covering is installed over an expansion joint, it will likely fail in that area. Use expansion joint covers designed for resilient flooring.

6. Always allow patching materials to dry thoroughly and install according to the manufacturer's instructions. Excessive moisture in patching material may cause bonding problems or a bubbling reaction with the adhesive.

HAZARDS

SILICA WARNING – Concrete, floor patching compounds, toppings, and leveling compounds can contain free crystalline silica. Cutting, sawing, grinding, or drilling can produce respirable crystalline silica (particles 1-10 micrometers). Classified by OSHA as an IA carcinogen, respirable silica is known to cause silicosis and other respiratory diseases. Avoid actions that may cause dust to become airborne. Use local or general ventilation or provide protective equipment to reduce exposure to below the applicable exposure limits.

ASBESTOS WARNING – Resilient flooring, backing, lining felt, paint, or asphaltic “cutback” adhesives can contain asbestos fibers. Avoid actions that cause dust to become airborne. Do not sand, dry sweep, dry scrape, drill, saw, shot blast, or mechanically chip or pulverize. Regulations may require that the material be tested to determine the asbestos content. Consult the document “Recommended Work Practices for Removal of Existing Resilient Floor Coverings” available from the Resilient Floor Covering Institute.

LEAD WARNING – Certain paints can contain lead. Exposure to excessive amounts of lead dust presents a health hazard. Refer to applicable federal, state, and local laws and the publication “Lead Based Paint: Guidelines for Hazard Identification and Abatement in Public and Indian Housing” available from the United States Department of Housing and Urban Development.

7. 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 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.

8. 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.
9. Perform pH tests on all concrete floors per ASTM F3441 Testing Concrete pH for Resilient Flooring. If greater than the allowable limit of the selected Ecore adhesive, neutralize prior to installation.
10. Adhesive bond tests should be conducted in several locations throughout the area. Glue down 3' x 3' test pieces of the flooring with the recommended adhesive and trowel. Allow to set for 72 hours before attempting to remove. A sufficient amount of force should be required to remove the flooring and, when removed, there should be adhesive residue on the subfloor and on the back of the test pieces.

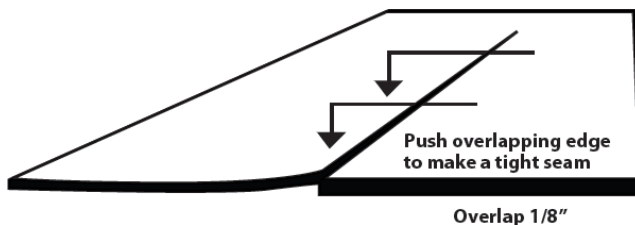
IV. MATERIAL STORAGE AND HANDLING

1. Material should be delivered to the job site in its original, unopened and undamaged packaging with all labels intact. Make sure original wrapping is not damaged before opening.
2. **If material is found to be damaged, immediately take photos and call your representative. Do not continue with installation. No labor claim will be honored on material installed with visual defects.**
3. The Turf rolls cannot be unloaded using a lift gate; they are 15 feet long or longer.
4. **Customer must have a heavy-duty pole forklift truck to unload turf.**
NOTE: Turf will be damaged if dragged on or against rough pavement or surface.

5. White turf may yellow at edges, or any areas not covered in original packaging, when exposed to warehouse setting atmospheres. Direct sunlight can reverse this. Keep Turf covered in its original packaging materials.
6. **NOTE:** Shipping pallets, cradles, banding, etc. are not intended for storage. After 7 days, remove material from shipping pallets, cradles, etc.
7. Turf and ShockPad rolls should always be stored inside, laying down, on a clean, dry, smooth surface.
8. All material and adhesive must be acclimated at room temperature for a minimum of 48 hours before starting installation.
9. Material is stretched slightly during the manufacturing process. At the job site, the installer should unroll all rolls and allow to relax overnight.

V. INSTALLATION – ShockPad – Use this section when field-uniting RageTurf NIL to rubber ShockPad

1. Make the assumption that the walls you are butting against are not straight or square. Use a chalk line to mark a starting edge for flooring to follow where the first seam will be located.
2. Remove the ShockPad roll from the shrink wrap and unroll it onto the floor. Cut all rolls at the required length, including enough to allow for shrinkage during acclimation. A few inches is recommended.
3. After proper acclimation and rough cuts are made, you may begin the ShockPad installation.
4. If end seams are necessary, they should be staggered on the floor and overlapped approximately 3-6". End seams will be trimmed **after acclimation period** using a square to ensure they fit tightly without gaps.
5. Align the first edge to the chalk line; **it is very important that the first seam is perfectly straight.**
6. Position the second roll with no more than a 1/8" overlap over the first roll at the seam. After adhesive is applied to substrate, the material will be worked back to eliminate the overlap, leaving tight seams and eliminating any gaps. **Do not over compress the seam. Over compressed seams will cause peaking.**



7. It may be necessary to trim the edge of the second lineal drop if the rolls do not extend the length or width of the room or field area. Rolls laid end to end with a variance in roll width greater than 1/4" could result in peaked seams.
8. Repeat for each consecutive sheet necessary to complete area or rolls to be installed that day.

VI. FULLY ADHERING – ShockPad – FULL SPREAD ADHESIVE – Use this section when field-uniting RageTurf NIL to ShockPad

1. After performing the above procedures, begin the application of the adhesive. E-Grip III, E-Grip 95, and E-Grip 99 should not be mixed. Use the adhesive right out of pail with a 1/16" sq. notch trowel. Approx. adhesive coverage is 95 sq ft/gal.
2. Fold over the first drop along the wall (half the width of the roll).
3. Take care not to spread more E-Grip III than can be covered with flooring within 30 minutes. The open time of the adhesive is 30–40 minutes at 70°F and 50% relative humidity.

NOTE: Temperature and humidity affect the open time of the adhesive. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-

site conditions and adjust the open time accordingly.

4. Lay ShockPad into the wet adhesive. Do not allow the material to “flop” into place; this may cause air entrapment and bubbles beneath the flooring.
5. Immediately roll the floor with a 100 lb. roller to ensure proper adhesive transfer. Overlap each roller pass by 50% of previous pass to ensure floor is properly rolled. Roll width first and then length. Roll again within 60 minutes.
6. Fold over the second half of the first roll and first half of the second roll. Spread the adhesive at right angles to the seam and then roll the flooring as above and with a 100-pound flooring roller.
7. Continue for each consecutive drop. Work at a pace to always fold material back into wet adhesive.
8. **Do not allow adhesive to cure on your hands or the flooring. Cured adhesive is very difficult to remove. We strongly suggest wearing gloves. Immediately wipe off excess adhesive on floor with a rag slightly dampened with mineral spirits / denatured alcohol. Follow the mineral spirits with a rag dampened with water to remove the mineral spirits / denatured alcohol.**
9. Use **J-Type Hand Roller** on all seams after the entire floor has been rolled.
10. It may be necessary to weigh down / brick the seams until the adhesive develops a firm set.
11. Keep traffic off the floor for minimum of 24 hours. Floor should be free from rolling loads for a minimum of 72 hours. Foot traffic & rolling loads can cause permanent indentations or debonding in uncured adhesive.

VII. INSTALLATION – RageTurf NIL

1. After allowing for proper acclimation, allowing the turf to relax 2-4 hours, rough cuts are made (add 2” per 50 lineal feet of turf), you may begin the turf installation.
NOTE: You may see wrinkles / bubbles in the turf. The adhesive will not “pull” them down to make the turf flat. The turf must be relaxed and flat when laid into wet adhesive. If not, make sure you have sufficient weights to hold any turf wrinkles / bubbles flat BEFORE gluing turf.
2. Review site to determine the direction where the turf seams may fall. Seams are preferred not be placed in doorways or pivot areas.
3. Start at one end and set each roll into place (with proper grain direction), ensuring that each roll comes together creating their respective seam. The first goal in laying the turf is to get both rolls that will create the seam as close as possible.
4. Once you have each roll laid out flat, you are now ready to cut your seam.

VIII. CUTTING SEAMS

1. Row Cut method is preferred. This can be achieved by cutting the seams from the back of the turf between the tufted rows. Using the blade closest to the seam edge, follow the procedure on both sides of the seam.

IX. SETTING AND GLUING SEAMS

1. All seams must be sealed with a quality seam sealer, such as AAT 181 Latex Seam Sealer.
2. Edges must be trimmed and set into the adhesive prior to the adhesive setting up and curing.
3. Use a crab stretcher to pull seams together or pull fullness away from the seam.
4. Seams must be properly fitted, prior to the adhesive setting up.
5. The use of stay nails is not recommended.
6. **Make sure you have enough weight / bricks to hold turf seams / bubbles flat BEFORE gluing turf.**

X. GLUING THE TURF TO THE SUBFLOOR

1. After performing the above procedures, begin the application of E-Grip III adhesive. Do not mix E-Grip III; use right out of pail using an **appropriate trowel size relative to subfloor.**

- a) Concrete – 1/16” sq. notch. Approximate adhesive coverage is 95 sq ft/gal.
- b) Wood - 1/16” sq. notch. Approximate adhesive coverage is 95 sq ft/gal.
- c) Existing Resilient Rubber – 1/16” sq. notch. Approximate adhesive coverage is 95 sq ft/gal.
- d) ShockPad – 3/16 x 5/32” V-notch. Approximate adhesive coverage is 45 sq ft/gal. **IF USING SHOCKPAD, SEE SECTION V. AND VI.**
- e) Underlayment - 3/16 x 5/32” V-notch. Approximate adhesive coverage is 60 sq ft/gal.

NOTE: You may see wrinkles / bubbles in the turf. The adhesive will not “pull” them down to make the turf flat. The turf must be relaxed and flat when laid into wet adhesive. If not, make sure you have sufficient weights / bricks to hold any turf wrinkles / bubbles flat BEFORE gluing turf.

- 2. Cut and/or trim the turf salvage as needed.
- 3. Fold back ½ of the run in the width to expose the substrate.
- 4. Spread the adhesive using the **appropriate size trowel**. Take care not to spread more E-Grip III than can be covered with turf rolls within 30 minutes. The open time of the adhesive is 30–40 minutes at 70°F and 50% relative humidity.
NOTE: Temperature and humidity affect the open time of the adhesive. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-site conditions and adjust the open time accordingly.
- 5. **Do not allow adhesive to cure on your hands or the flooring. Cured adhesive is very difficult to remove; we strongly suggest wearing gloves. Immediately remove excess adhesive with a rag slightly dampened with mineral spirits / denatured alcohol. Follow the mineral spirits / denatured alcohol with a rag dampened with water to remove the mineral spirits / denatured alcohol.**
- 6. Lay the turf into the wet adhesive. Do not allow the material to “flop” into place; this may cause air entrapment and bubbles beneath the flooring.
- 7. Immediately roll floor with a 75-100 lb. roller to ensure proper adhesive transfer. Overlap each roller pass by 50% to ensure floor is properly rolled. Roll width first and then length. Roll again within 60 minutes.
- 8. Fold over the second half of the first roll and first half of the second roll. Spread the adhesive at right angles to the seam. Lay the floor into wet adhesive and roll flooring as above with a 75-100 lb. roller.
- 9. Continue the process for each consecutive drop. Work at a pace so that you are always folding material back into wet adhesive.
- 10. Use **J-Type Hand Roller** on all seams after the entire floor has been rolled.
- 11. **Remember: All seams must be sealed with a quality seam sealer, such as AAT 181.**
- 12. It may be necessary to weigh down / brick the seams / bubbles until the adhesive develops a firm set.
- 13. Keep traffic off the floor for a minimum of 24 hours. Floor should be free from rolling loads for a minimum of 72 hours. Foot traffic and rolling loads can cause debonding in the uncured adhesive.

XI. Maintenance

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

1.	Cleaning
2.	Brush periodically
3.	Do not abuse

1. Cleaning

- a. 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.

b. Stains and other blemishes

Be prompt. 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.

In this manual, cleaners are divided into two groups. The first can be used liberally directly on the turf surface, and the second should only be applied by rubbing a cloth that is lightly soaked in the cleaner to-minimize penetration of possible harmful agents below the turf surface.

The **first** group of cleaners, which generally can be applied without any special precautions, are:

- 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 from Ecore.
- 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 the agent must be applied sparingly and care taken to avoid penetration beneath the turf, are:

- Mineral spirits or a grease spot remover like perchloroethylene (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.

- c. 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.
- d. 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.
- e. 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.

2. **Brush Periodically**

- a. Matting of fibers may occur in areas of high foot traffic, especially if fibers have become soiled with dirt and other airborne pollutants.
- b. Periodic “cross brushing” of the Turf can help restore the aesthetic appearance of the Turf. “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.

3. **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 they can damage the Turf by fusing the tips of the fibers together.
- Furniture and equipment with sharp or jagged edges should not be placed on Turf as this may puncture or tear the Turf.
- Water from sprinkler systems or hard water areas can leave mineral deposits on Turf that may cause discoloration.
- Make sure Turf is not exposed to reflected sunlight windows as this may fuse the Turf fibers together.

Proper care and maintenance will enhance the aesthetics and usefulness of your turf.

WARRANTY

All Ecore RageTurf NIL flooring is guaranteed to be free from manufacturing defects on both material and workmanship. If such a defect is discovered, the customer must notify Ecore either through the contracting installer, distributor, or directly. If found to be defective under normal non-abusive conditions, at the discretion of Ecore, the sole remedy against the seller will be to repair, to replace, or to issue a credit not exceeding the selling price of the defective goods. These warranties only apply to the original purchaser.

The warranty duration of RageTurf NIL is 5 years, subject to the terms and conditions of this warranty.

Warranty shall not cover dissatisfaction due to improper installation, normal wear, damage from improper maintenance or usage, or general misuse, including and without limitation: burns, cuts, tears, scratches, scuffs, damage from rolling loads, damage from cleaning products not recommended by Ecore, slight shade variations or shade variations due to exposure to direct sunlight, or differences in color between samples or photographs and actual flooring.

I. *Items Under Warranty:*

1. WEAR – Ecore warrants that RageTurf NIL products will not wear more than 10% of its surface pile weight from abrasive wear during the warranty period. By abrasive wear is meant fiber loss from the wear layer through normal abrasion, not crushing or flattening of the fiber surface pile in any area, nor

due to abnormal usage of the fiber surface.

2. EDGE RAVEL – Ecore warrants that RageTurf NIL products will not edge ravel along seams during the warranty period.

II. Warranty Exclusions

1. Disfigurement or damage caused by abnormal use or any damage to the Turf not arising out of a defect to our product. For example, the warranty does not cover tears, burns, cuts, installation on stairs or damage in transit.
2. Differential fading due to light exposure, shading, pile crush, dye lot differences and soiling.
3. Any condition that would have had a visible defect upon inspection prior to installation.
4. Damage to Turf from any use for which the product was not designed.
5. The exact matching of shade or color.
6. Any express or implied promise made by any salesman or representative.
7. Tears, burns, cuts, or damage due to improper installation, improper use or improper cleaning agents or maintenance methods.
8. Labor costs for installation of original or replacement material.
9. 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.
10. Problems caused by moisture, hydrostatic pressure, or alkali in the sub-floor.
11. Problems caused by uses, maintenance, and installation that are contrary to RageTurf NIL specifications, recommendations, or instructions.
12. Material installed outdoors.
13. Material installed with obvious defects.
14. Material that is not installed and maintained as recommended by Ecore.
15. Damage to flooring products from pallet jack and tow-motor or vehicular traffic.
16. 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.)
17. Premature wear and deterioration from spikes or natural grass cleats.
18. Differences in color between products and photography.

These warranties are in lieu of any other warranty expressed or implied. Ecore shall not be liable for any incidental or consequential damages which may result from a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. These warranties give you specific rights, and you may also have rights which may vary from state to state. To know what your legal rights are in your state, consult your local or state Consumer Affairs Office or your State Attorney General. For complete and latest warranty information, please see www.ecoreathletic.com.



www.ecoreathletic.com

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