INSTALLATION INSTRUCTIONS
(Landscape & Playground)

Index:

1. **Tools and Materials.**
   a. **Tools (needed and/or recommended.)**
      - **Shovel**
      - **Hammer**
      - **Sidewalk Chalk**
      - **Medium to Stiff Bristle Broom or Power-Broom**



      - **Drop Spreader (NOT a broadcast spreader)**


      - **Sod Cutter** (If this tool is needed...there are 2 choices; single axle or dual axle. The dual axle is a little easier to handle.)


      - **Landscaping Rake** (Great to fine tune your base.)

      - **Yard or garden rake.** (Good for general disbursement of aggregate.)

- **Plate Compactor and/or Ride-on Double Drum Roller with smooth wheels.**

- **Utility or carpet knife with 2-sided blades.** (Same blades can be used for the cushion back cutter and in the loop-pile cutter.)


- **Cushion-back Cutter** (Good tool to have for cutting seams.)

- **Red Loop-pile Cutter** (Great for cutting the outer shape of your putting green.)

- **Carpet Shears and/or Duck-Bill Snips** (The Duck-Bill snips have an offset handle.)


- **Row finder | Awl or Flathead Screwdriver.** (Both of these tools work well to find the rows within the turf.)


or

- **Seam Roller**


or

- **Wheelbarrow or Bobcat w/ smooth bucket.**


or

- **Screen-rake or drag net (not a necessity but great tool to have for your final touches on the base…!)**

- **Heavy roller for seaming (75-100LBS. vinyl floor roller or hand sod roller)**


- **Leaf Blower (backpack or handheld)**


b. Materials

- **Weed Killer**
- **Marking Flags**
- **Wooden Stakes**
- **Field Marking Paint**
- **Crushed aggregate**
- **Synthetic turf**
- **Adhesive**
- **Seaming cloth**
- **Nails**
- **Infill material**

2. Lay out the area.

Depending on your project, your area might already be defined by various objects or landscaped items, such as a hedge line, rock wall, landscape bed, fence or even a house. However, should your area not be defined, it is always best to paint the piece, or pieces, of turf onto the ground identifying where every corner and side to every piece of turf is going to be. To do this you want to use a combination of marking flags (or stakes) along with field marking paint to identify the turf edges. Make sure you work in parallel lines and create 90-degree angles where your design calls for them. Once you have your turf corners and edges marked on the ground…you can **spray-paint in the perimeter of your intended area.**

3. Remove sod and prepare sub-base.

WARNING…MAKE SURE BEFORE YOU START TO DIG DOWN, ESPECIALLY BY MECHANICAL MEANS, YOU KNOW WHERE ANY POWER OR WATER LINES MAY BE. (It is recommended that you contact your local county authority and ask them to mark any underground wires. This is normally a free process and helps protect you from any liability should you hit a line.)

Once you have determined that no water or electrical lines will be in your way…go ahead and remove the sod. A sod cutter is preferred with this task and makes the job much faster and easier. While using the sod cutter you will want to start by cutting along the perimeter line you created. Once you run the perimeter of your area go ahead and remove the rest of the sod.

Once all the sod has been removed it is time to dig out your sub-base. Be sure to remove enough to allow for the proper base depth. (Read Step #4 for more insight on base thickness and installation.)

Installation extra: Depending on your geographical location, it is a good idea to use weed killer on the cleared area and/or a grass blocker spray. This will help inhibit grass or weeds from growing through your synthetic grass (Always use these products according to the manufacturers' recommendations).

4. Base installation.

There are multiple approaches with a variety of products to utilize when constructing a base for synthetic grass. For this manual we will talk about the basic aggregate base. Please read Step #9 for added insight on utilizing nailer boards along the perimeter to secure your turf.

The use of different aggregate materials will produce different drain rates. If a fast drain rate is important we recommend using a 2-layered base consisting of "57 stone" (thick bottom layer – 75% of base thickness) and "¼-inch-minus" (thin top layer – 25% of base thickness). For a base that does not need a fast drain rate you can get away with a one layered system utilizing a '3/8"-minus' or '1/4"-minus' product. It is our recommendation to contact your local quarry and let them know what you trying to build. They should be able to better assist you in product choice(s) and thickness.

The ultimate goal with creating a synthetic turf base is that it will remain stable for many years and the finished grade is smooth so that you can't feel or see any discrepancies in your base through the turf.

Once you have acquired the correct base material and your sub-base is ready. Go ahead and bring in the rock, grade it and compact it.

Please note: DO NOT bring in more material than your compactor can handle. If you are using a plate compactor we suggest compacting only a three-inch (3") layer at a time. Should you be using a double drum roller check with the rental company or manufacturer regarding the machines specifications/capabilities.

Installation extra: Should you be utilizing a "1/4-inch-minus" material (sometimes referred to as screenings, fines, or stone dust) we recommend using a screen rake to finalize your base. This tool really helps smooth out any minor inconsistencies in the base. This is the same tool that is used to smooth out baseball infields.

Take your time installing your base. A smooth surface will determine how well the turf looks once installed (you cannot expect a great lawn without a well constructed base).

Playground specific installation:

A playground installation may require a fall zone area underneath and around the playground equipment itself. This is very common and required for commercial or municipality projects. PolyGreen Foam padding can be used under the synthetic grass and on top of the crushed aggregate base to create a safe acceptable unitary playground system.

Utilizing a 2.125" PolyGreen Foam pad under synthetic turf will net you a 6 foot fall zone.

Utilizing a 1.125" PolyGreen Foam pad under the turf will net a 3 foot fall zone.

The foam padding comes in 4'x6' panels and is 2 1/8" thick. Keep these dimensions in mind when measuring out the area and the depth of your base. This will be important to know when installing next to a sidewalk or perimeter border. The height of the synthetic grass will vary (refer to your spec. sheet). The foam pad is permeable so no extra preparation is necessary in order for the product to drain vertically.

After the crushed aggregate is compacted and ready for the PolyGreen Foam pads, lay them appropriately. Do not seam pads together.

Installation extra: When in doubt about playground safety, please refer to the standards set by the National Parks and Recreation committee to ensure you are building to code. You can also lean on a Certified Playground Safety Inspector (CPSI) to help you identify the specific requirements for your project.

5. Lay turf in place.

Before placing any rolls onto the base, make sure to establish which direction the "grain" will run. (The "grain" is the direction to which the fibers will lay.) It is standard practice to have the **grain leaning towards the most viewed vantage point**. The turf always looks better when the fibers are pointing towards you than away from you.

That said, start at one end and set each roll into place (with proper grain direction), ensuring that each roll comes together creating their respective seam. Please keep in mind that you may have one, or multiple objects to cut around such as trees, rocks, playground poles, etc. The first goal in laying the turf is to get both rolls that will create the seam, as close as possible. Then should there be obstructions (trees, rocks, poles, etc.), you will want to cut an additional seam(s) to ensure the turf lies flat. It is recommended to cut such 'additional seams' with the least amount of distance to the turf's edge (whether that be the seam edge or outside edge of the turf.).
Once you have each roll laid out flat, you are now ready to cut your seam.

6. Cut seam(s).

There are a two different ways to seam depending on the turf you have chosen. Some products have a urethane coated back while others have a pad attached. Typically, the urethane-backed seams are cut from the back and the foam back seams are cut from the top. See 5-1 or 5-2 depending on your product's backing.

6-1. Seaming a urethane-backed turf.

With a scrim backed turf all you need to do is cut a row or "channel" to follow from one end of the roll to the other. What we mean by a "channel" is the area created on the back of the turf between two tufted rows. You want to pick a channel about 3 to 5 tufted rows inward from the edge of the turf. Once you have chosen your channel, use a cushion back cutter, start at one end and follow the channel to the other end of the turf. In achieving a good seam, it is very important to not cross over into a new channel. If you happen to cross over simply start over in a new channel.

6-2. Seaming foam backed turf.

Having a product with foam backing hides the channels normally seen from the back. Therefore you need to cut from the top.

To cut from the top you will need a couple of tools. The **first tool** you will need is a row finder (an **awl or flathead screwdriver works well)**. Push the row finder forward to disturb the fibers and create a visual line for you to follow. (Pushing in one direction versus another gives you a better visual…so check before you start cutting.) Once you have pushed the row finder through the entire "channel", take your cushion back cutter and cut your seam.

A good way to cut from the top is to **run your row cutter a couple of times. Glide your cutter. Drop the blade and then cut.**

7. Setting and gluing seams.

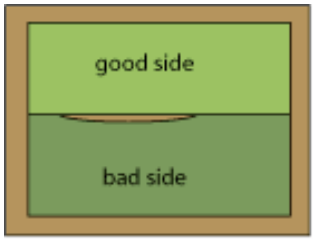
Once you cut all your seams…adjust each roll to make sure edges are sitting together properly. One side can touch the other however you don't want any overlapping edges or force the two edges together to the point where they will create an upside down "V". Ideally you want to make sure the seam edges are no further than 1/8" apart.

Please note: The seam should look good prior to gluing. Run a seam roller, and or broom, to fluff and manipulate the fibers to give you a better sense as to how the seam will look. You should never count on the infill to help hide your seam.

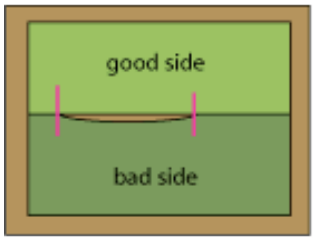
Adjusting an uncooperative seam…!

What do you do when you have a seam that is not coming together properly…? The seam just does not look good…even though you cut the seams just right. You might inevitably run into a situation where you might have a gap in some spots and an overlap in others. An overlap is better than a gap because you can trim the overlapping edge. That said, should you find yourself in a situation where there is a gap in part of your seam just take steps to create an overlap in that area. See Diagram ONE on the following page for an illustration.

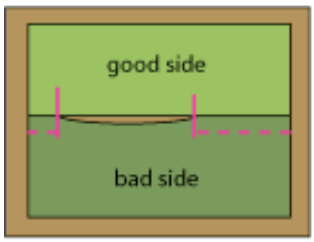
Diagram ONE:



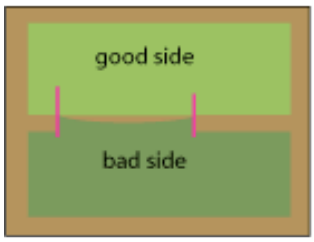
Should you find there is an unacceptable gap between the 2 seam edges. Establish a good side and a bad side.



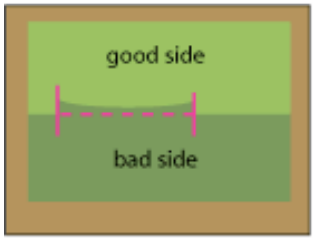
Create "unacceptable marks". To to this use sidewalk chalk to create lines, or marks, across the seam where the unacceptable gap(s) starts and ends. Go ahead flip your seam edge over and tranfer those marks to the backing.



Create a "recut number". To create such a number...measure the width of the gap in approximate rows then add 4 rows to that number. For example, If your largest gap is approximately 2 rows...then your re-cut number is 6.



Take your "re-cut number" and count that many tufted rows in from the seam edge and recut. Start on one side and cut to the "unacceptable mark". Once at the mark, cut 90 degrees toward the seam edge to remove turf. Repeat process for opposite site of seam edge. At this point you have now created a "tab".



Pull the bad side to the good side and trim the overlapping "tab" you created.

You should now have a perfect seam...!

Once your seam is lying just right…you are now ready to glue the seam.

To start, **pull one edge back**. Then lightly **scrape your base along the two ends of the lying edge**. (You only want to lightly scrape at the two corners of the lying edge…not in the middle of your seam). The purpose of these marks is to serve as guides to center your seaming cloth. Once your marks are down…**flip the second lying edge over**. You want to flip each side over about 2.5 feet each. This should give you ample room to lay your seam cloth and adhere glue to it.

Once you pull back the second edge you want to **center your seaming cloth** along the two lightly scaped marks you created in your base.

Once the cloth is centered…take steps to ensure the cloth does not move. You don't want the cloth to move from any sudden wind or while gluing. To do this, simply place nails at each end of the seaming cloth along with some nails randomly placed through the middle. Every 10'-15' should suffice. A quick reminder…make sure when you place the nails you don't dent your base…!

Once the seaming cloth is centered and secured…**go ahead and spread the glue**. A 1/8"x1/8" 'V-notch' or 'U-notch' trowel is typically used with most of today's synthetic turf adhesives. However, please use a trowel size that is recommended by the adhesive manufacturer. Utilizing a trowel that has to big of a notch runs the risk of getting too much glue onto the seam cloth, which could then seep up between the seam edges and clump the fibers together thus resulting in a less than perfect seam.

Once you have finished laying your adhesive you are now ready to **lay your turf edges down onto the glue and close your seam.** Before closing your seam, make sure the backing of each seam edge and the seam cloth is clean of any debris and the glue has flashed appropriately. ("Flash" refers to the time the glue needs order to bond correctly.)

Due to the variety of adhesives available it is best to check with the adhesive manufacturer as to recommended flash time and size of trowel used.

A good way to lay the turf back down is to first study the "lay of the fibers" relative to the seam. Typically you will have one side of the seam where the fibers will lean away from the seam and the other side will want to lean in toward the seam. **You want to install the side that has the fibers laying away from the seam first.** Then lay the second side down. This will ensure that when laying the second side you don't trap or push any fibers into the glue.

Should you come across a scenario where both edges are leaning in toward the seam…it is best to lay both edges at the same time. Start at one end and work your way toward the other end bringing both edges together like a zipper.

Once you have both sides of the seam laid down onto the adhesive…Go ahead and **use a seam roller along the entire length of the seam**. The seam roller will not only help manipulate the fibers to help hide the seam better but also help push the turf into the adhesive.

It is also recommended to use a heavy roller (such as water filled sod roller or a heavy 75-100 pound vinyl floor roller) along the seam. This helps push the turf into the adhesive to ensure a strong bond. Should you not have access to a heavy roller (not a double drum roller) make sure you walk (baby steps!) along the entire seam so your weight will provide the pressure needed to ensure a good bond.

At this point, it is not a bad idea to drive nails along each side of the seam. One every 6"-18" along each side should suffice to help keep the seam tight and minimize any movement along the seam. Think of this step as "seam insurance"…! (Please note you would only do this when your turf is sitting directly on an aggregate base. Do not use nails along a seam when the turf is sitting on top of a playground pad.)

Installation extra: Should you have 3 or more rolls that you are seaming together, it is good practice that once you have seamed rolls #1 and #2 together that you lightly kick roll #2 in the direction of roll #3 to ensure roll #2 is stretched properly prior to seaming. This will minimize any potential bubbles in your turf.

8. Cut the perimeter edge.

After the seams are installed, ALL turf should be kicked (or power-broomed in one direction) to slightly stretch the turf prior to cutting and securing the perimeter edge.

To cut the perimeter edge, use a carpet knife. Should you be working in an open area not defined by a rock wall, fence, etc. we recommend using sidewalk chalk to draw your perimeter edge on top of the turf before you cut the turf. Once satisfied with that shape you have drawn…follow your line and cut.

To cut the outer edge (in open space) we recommend using a red loop-pile cutter. You have to push forward using this knife and in doing so allows for a more controlled cut along the line you created. Be advised that you might need to make a handful of blade changes to cut your final shape as your blade will undoubtedly become dull.

Once you have cut your final shape…**go ahead and remove the scrap pieces of turf.**

9. Secure the perimeter edge.

There are a few ways to secure your turf. Here are a few approaches:

9-1. Nails along the outer edge.

Use 6" timber nails. We recommend placing the nail about ½" to 1" from the edge and every 6"-12" around the perimeter. When you come across a seam it is recommend placing 2 nails in each corner…one closest to the corner and another towards the center of the seam. This will give you 4 nails along the end of each seam.

Added note: When hammering the nail into place…tap the nail until the head gets just below the tips of the fibers….then brush the fibers with your hand to straighten them up…then hammer in the nail in a little bit more….brush the fibers once again and then hammer once more. This step should help ensure minimal fibers get trapped under the nail head.

9-2. Perimeter nailer boards.

The use of pressure treated or engineered lumber (2x4s) to create a "nailer board" is a great way to provide a very strong secure edge. There would need to be some prior planning for this approach, as the nailer boards would have to be placed prior to the base being installed. (See Step #4)

The nailer boards can be secured a few ways. First, by screwing them to wooden stakes. (Top of stake and nailer board to be flush together) Second, using rebar by drilling a hole through the nailer board and then hammering the rebar through the hole and into the sub base/ground. Third, can screw them into concrete using concrete specific screws, such as Tapcon.

Once all nailer boards, base and turf area installed properly…use a galvanized staple every 3"-5" along the nailer board.

Installation extra: You can cut the turf to the edge of the nailer board or leave a little overhang then wrap and staple the turf onto the backside of the nailer board.

9-3. Weed cloth and timber nails.

Combining the use of a commercial grade weed cloth and 6" timber nails can provide a strong secure edge. Take a 3' or 4' wide roll of commercial weed cloth and lay half (of the width) flat under the perimeter edge. Cut to length as needed. Once the first half is laying nicely under the turf…bury the second half of the weed cloth under the adjacent landscaping. (sod, rock, much etc.) Once both sides are sitting nicely…adhere the weed cloth to the underside of the turf. Once you have glued the one half to the turf, use the 6" timber nails along the

outer edge. See 9-1 for more details on using the nail.

10. Top-dress turf with proper infill. (If needed.)

Prior to dispersing the topdressing, or "infill", you will want to brush your fibers ("against the grain") to get them to stand up as best they can. Then utilizing a drop-spreader, evenly distribute a small amount of infill. (For a sand infill application you want to spread about 1 to no more than 1.25 pounds per square foot at any one time.) Installing too much at once will crush the fibers, creating patchy spots throughout. These patchy spots will create a finished look that is less than ideal. Should you have some patchy areas, you can utilize a leaf blower to disperse some of the extra infill to a more uniform consistency.

Once you have installed your infill to the proper amount. You are ready to clean up.

11. Clean up and enjoy the benefits.

For any additional questions, comments or concerns please do not hesitate to contact your turf supplier.

Notes: (intentional space for notes regarding calls you've made, tools and materials you need, etc.)