

Installation of Putting Green

You can install your putting green using a base of concrete, asphalt, crushed rock & crushed limestone or just crushed limestone. Concrete is the best and also the most expensive. Most people prefer to construct their base using crushed limestone because it is the most economical. When using a concrete base, you should follow the appropriate steps below. The concrete should be formed to comply with the desired size of the putting green and step 5 should be done before the concrete hardens. You should also consider the contour of the putting green before pouring the concrete.

Installation of our putting greens using the crushed limestone base is as easy as 1, 2, 3. The instructions make the installation simple and easy to enable the average home owner to install it himself. Installation of the putting green usually takes one day, and you probably already own most of the tools needed.

Simply click on the links below to view the easy steps to your putting green and/or sand trap.

Note: All turfs will expand and contract to some degree based on temperature conditions.

Installation Steps

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Tools and Materials Required

Many of the tools required for installing a synthetic golf putting green are common household items that you most likely already own. The equipment that you do not own, such as a gas tamp or plate compactor, are able to rent at a local rental company in your area.

Tools Required

- Hammer
- Measuring tape
- Rope or cord
- Drop spreader
- Can of spray paint
- Lawn sprayer and vegetation kill
- Weed barrier or plastic liner
- Shovel
- Wheel barrow or bobcat
- Landscaping rake
- Garden hose with spray nozzle
- Sod cutter (rental equipment)
- Stiff bristle broom
- Ride-on roller or gas tamp (rental equipment)
- Industrial carpet cutting knife
- Small hand shovel



The measuring tape, extension cord, and spray paint will be used to measure and mark the desired area for your putting green. The lawn spray, weed killer, and weed barrier will be used to kill and block vegetation from growing under your sub-base. The shovel, wheel barrow, and rake will be used to move and spread the sub-base material. The garden hose, spray nozzle, ride-on roller, lawn roller, or gas tamp will be used to compact the sub-base. A gas tamp, also called a plate on roller compactor, will compact the sub-base much quicker than the lawn roller. A ride-on roller can be rented for about \$155 a day which compacts the fastest. A lawn roller can be rented for about \$8 - \$12 a day, and a gas tamp will cost about \$20 - \$30 a day to rent.

The drop spreader and the push broom will be used to fill the putting green with sand. The small hand shovel is used to dig the regulation holes in the sub-base. The utility knife will be used to cut the holes out of the turf.

Materials Required

If you are installing your putting green on concrete, you need not be concerned with the sub-base material.

The best sub-base consists of 4" of crushed rock (also known as Class "A" rock) topped with 4" unwashed crushed limestone. The crushed stone underlying sub-base should be clean and have no fines. However, most people feel that 4" of crushed limestone, by itself, is adequate. **The following materials and instructions are based on installing a 4" sub-base of crushed limestone.**

Sub-Base Material

This is an unwashed crushed limestone compacted to form a solid foundation for your golf putting green. It is known by several different names in different areas of the country. It has been called:

- Granite crush and run
- Manufactured sand
- DG (disintegrated granite)
- Crushed fines
- Stone dust
- Limestone or limestone dust

Be sure that the crushed limestone is 1/4" minus. If 1/4" minus is unavailable, you can get by with 3/8" minus. This means that no piece of stone is larger than 1/4" or 3/8". You want the smaller, finer pieces of stone to help in the compaction process. You will be able to find the stone at a local stone company, rock quarry, or gravel pit at a cost of about \$10-\$15 per ton delivered. When calling, be sure to tell them you must have stone that is NOT washed.

To determine how much sub-base you will need, use this formula: for every 12'x6' area (or 72 sq. ft.), you will need one ton of crushed limestone. For example, if you have a 12'x24' (or 288 sq. ft.) putting green, you will need 4 tons of stone. (four 12'x6' areas or 288 divided by 72 = 4). You will need the same amount of stone for the crushed rock, beneath the crushed limestone, if you choose to use both.

Sand-Fill for Polypropylene Putting Greens

White and black sandblasting sand (30 - 35 grit or medium): make sure it is 35 grit sandblasting sand and not all-purpose sand. If you can't find a 35 grit, then a 40 or 60 grit can be substituted. It will be a little bit finer sand and may take a little longer to push into the turf. You will be able to find this sand at a local sandblasting supply store for a cost of \$4-\$6 per 100lb. bag. For aesthetic purposes, 20% of the sand you buy needs to be black or putting green sand.

To determine how much sand you will need, use this formula: The 1/2" Performance turf will take about 2.5 lbs of sand per sq. ft.; the 1" Performance turf requires 5 lbs. of sand per sq. ft. For the Performance putting green, take your total square footage and multiply it by 2.5 or 5. For example, a 12'x24' Performance 1/2" putting green is 288 sq. ft., so $288 \times 2.5 = 720$ or approximately 7-100 lb. bags of sand.

Step 1: Determine a Location

Take your time when determining the location and size of your putting green. Some people think that next to the home would be a good location for their putting green. Others feel that a low spot in their yard would be a good location. Actually, these are two of the worst locations to put a to the house is a bad location if you plan to chip and pitch to the green. You could actually spend more time replacing windows than practicing golf. Low spots tend to collect water run-off and should be avoided because it can erode and deteriorate the sub-base.

Choose a spot that is away from the house and does not collect water. It should be fairly level. Find an area that is accessible from other areas of the yard for chipping and pitching. Take an extension cord or rope and lay it in the general shape that you desire for your putting green.

While creating the shape and size of the putting green, you will want to work with widths that are a multiple of 12' or 15' (width of the turfs).



Rolls of turf can be seamed together successfully to create widths of 24 or 36 feet and can be trimmed to any length. As you experiment with various sizes you may find that the size you first considered is too small. It helps to chip and pitch to the marked area from several locations to make sure it suits your needs.

Once you have a size and shape you're happy with, mark the area with spray paint. This will serve as a guide for the sub-base. You may even want to leave it for a couple of days to make absolutely sure you are going to be happy with the size.



Now that you have the size and shape, make sure you have all the tools and materials required for the installation process of your new putting green.

Step 2: Clear the Area for the Sub-Base

You can cut the grass inside the outlined shape (if applicable) with a lawn mower on the lowest setting and then remove the sod. Removal of the sod provides for the most solid sub-base. Remember your putting green must be high enough to allow for water run-off.

Completely spray the area with vegetation killer. Finish preparing the area by laying out the weed barrier and securing it to the area where your putting green will be installed. The weed barrier will prevent grass from growing through your sub-base and through your putting green.



Step 3: Distribute the Sub-Base Material

Before distributing the sub-base, consider the location for the cups. You should consider digging a small trench, under the sub-base, from the cup to past the edge of the green and put gravel into the trench or a PVC pipe, from the cup to past the edge of the putting green, so that water will drain under the putting green. The cups have holes in them and when it rains, water will drain into the area, under the hole, and saturate it.

Bring your crushed limestone sub-base material into the area with a bobcat or wheelbarrow and spread the sub-base material evenly, except in the areas where you desire extra depth, contour and slope. Use a shovel and a rake to distribute large amounts of sub-base material. Distribute it in 2" layers for purposes of compacting (see step 4). Use a yard rake to continue evenly distributing the sub-base material. Use the flat side of the rake to smooth out the surface. Be sure to allow for a slight slope for drainage off the top of the putting green.



To assure yourself that the sub-base is distributed to a depth of 4", you may want to frame the area with 2"x4"s.

Remember, you will need one ton of each sub-base material for every 72 sq. ft. or 12'x6' area of your putting green.

Step 4: Compact the Sub-Base Material

Compacting is necessary to keep the surface from settling irregularly, causing an undesirable ball roll when putting. There are three tools you can use to compact the sub-base. A gas powered roller can be used to roll over the surface of the sub-base; a gas tamp (a motorized tool that pounds the sub-base repeatedly); or a lawn roller. Each of these items can be rented from local rental establishments. If you have trouble finding rental establishments in your area, try calling your local hardware store or tree nursery to help you.

Before you start the compacting process, you will need to spray the entire sub-base with your garden hose. Using a spray nozzle, wet the sub-base thoroughly, but do not saturate it.



If you use a crushed rock base below the limestone sub-base, The crushed rock does not need to be compacted. It serves as a base for strength and drainage.

Your crushed limestone sub-base should be sprayed with water and compacted with every 2" of sub-base material applied.

Using a gas powered roller: This is the easiest way. Rent a gas powered roller that you can ride on. It should have a front roller that vibrates and where water can be applied to each roller during operations. Spray the sub-base with the garden hose so that it is damp all the way through. Make sure not to over saturate. Roll the first 2" surface of the sub-base from end to end, with a small amount of water being dispensed to each roller (so that no sub-base material will be picked up on the rollers), until you have rolled over the whole area. Add the second two inches of material. Make sure that the sub-base is damp all the way through and continue rolling the sub-base until the surface is completely smooth. Repeat rolling the surface, if necessary, to ensure a solid smooth foundation for your putting green.

Using a gas tamp: Compact the sub-base by starting at one corner and move from end to end until you have covered the whole area. You may need to spray with your garden hose and repeat the compacting process. Continue to compact in this manner until you no longer leave footsteps in the sub-base.

Lawn Roller: Fill the roller with water. Start in one corner and roll the entire sub-base. You may need to spray with your garden hose and repeat the compacting process. If the roller starts picking up the sub-base material, you may want to spray the drum with water as you go. Continue to compact in this manner until you feel that you have done the best you can.

During the compacting process of the sub-base you may have small bumps, ridges, low spots, or dips on the surface. Use a rake or shovel to smooth over those areas. Then go back over the sub-base with the compacting tool you are using. You will want the surface to be completely smooth and solid. Make sure to build in any slope or contour that you desire at this point. Try rolling a few golf balls over the surface of the sub-base to test the surface. You will want the ball to roll in a relatively straight path with little movement from side to side.

The turf will adhere to whatever surface you create. Make sure that you don't create too much of a slope, the ball may roll too fast and off the putting green. In general, drop the slope approximately 1" for every 10 ft. in the length of your sub-base. Again, test the surface with a few golf balls to check the slope of your sub-base. The ball will break the same on the sub-base as it will on the putting green. Your sub-base should be 4" in depth when completely compacted.

Step 5: Install the Cups

For concrete installation, position and place your cups before the concrete sets.

If you don't install a crushed rock base below the concrete or the limestone, consider digging a trench from each hole to the low side of the putting green. The trench should be filled with gravel or a PVC pipe to drain the water from the cup after a rain. Otherwise, water may drain under your putting green and settle there.



Position the cups on the sub-base in an arrangement that you like. Experiment with different locations. Continue to move the cups around until you are satisfied with their placement on the putting green.

If you predetermined the location of the cups and put gravel or PVC under the sub-base, mark the holes for the cups at their predetermined locations.

Use a small shovel (such as a gardening shovel) to dig the holes as close to 4 1/4" as you can. It is not necessary to dig the hole perfect because you can fill in around the hole after it is installed.



After cutting each hole, remove all excess dirt from the inside and around the hole. Fit the cup into the hole until it is flush with the sub-base material. Fill any gaps around the cup, if necessary. When you have installed all the holes, compact the sub-base around the cups again.

Now that your cups are installed, it is a good idea to check the sub-base one final time. Try a few putts and make sure the slopes and contours are what you want. This is the last point of the installation process that will allow you to make changes to the sub-base. It may be difficult to go back and make adjustments once the putting green has been installed.

Step 6: Dressing the Sub-Base (Optional)

After the sub-base has hardened, take the landscaping rake or the backside of a regular rake and gently remove stones sticking above the surface of the sub-base. Sweep the loose stones off of the sub-base. You will find areas where the sub-base has pits, etc. from the stones being removed. Add small amounts of 30-35 grit sand and lightly spread it in those areas before laying the golf putting green on the sub-base.

The sand will fill in the holes and make the bottom of the artificial putting green smooth. The sand also allows the putting green to freely expand and contract with weather conditions.

Step 7: Join Two Rolls of Turf (if applicable)

If you are installing a putting green that is no more than 12' or 15' wide, omit this step.

For unitary backed turfs (sand filled): On a hard surface, other than your sub-base, lay the two rolls of turf side by side, green side up to determine where you want them joined. Make sure the "grain" from each roll of putting turf is going the same direction. Once you have determined the location of the seam, flip each roll over so the black side is up. Take a utility knife with a brand new blade and cut between the first and second row of stitching of the turf. Take your time and do not cut into the stitching. Do this for each roll. Cutting between the rows of stitching will create a perfectly straight cut for a tight fit for your putting green.



For Foam Backed Turfs: Do not cut a straight line in a turf with a foam backing for seaming, because you cannot see the rows of stitching. If you want to seam sections together yourself, ask us to true-cut the sections at the factory so that the seams will fit together correctly.

It is easy to round off the corners or make it a kidney shape. However, we recommend that you do not make a straight cut unless you use a professional carpet layer.

Flip the putting green back over so that the green is facing up. Make sure the seam fits cleanly together and is tight for the full length of the seam. Once you are satisfied with the seam, move the pieces of turf to your sub-base.

Position the pieces of turf to be seamed on the sub-base. Place the two pieces of turf together to form a tight seam. Position the seaming strip on the sub-base under the seam. Make sure there is an equal amount of seaming strip on each side of the seam. Spread the adhesive over the entire area of the seaming strip and allow the adhesive to set up to 5 minutes before placing the turf on the seam. Make sure the thickness of the adhesive is no more than 1/8".



Starting at one end of the putting green, fold the pieces of turf back together. Press the seam in place as you go, applying pressure to ensure good contact. Once the entire seam has been placed together, walk over the joined area several times. Try not to walk directly on the seam. Be careful not to allow adhesive to seep through the seam. Allow one hour of cure time before finishing the installation process of your putting green.

Step 8: Shape and Secure the Putting Green

If you need a guide to cut the final shape of your putting green, use an extension cord or chalk and lay it on your putting green surface in the general shape you desire. Simply take a pair of sharp shears or a utility knife and cut along the outside perimeter of your marked area. Be sure to take your time and make clean cuts.

The turf should not be glued. However, if you do choose to do so, you need to use synthetic surfaces 34 N. To apply this adhesive, use a 1/8 or 1/16 notched trowel. This product **cannot** be bought at your local hardware stores. To prevent stretching, moving, or ripples, due to temperature variations, the turf should be attached around the perimeter with landscape stakes. You may want to cover about 2"-4" of the edges of the turf with the grass sod or landscape edging material, for additional stability.

If you choose to glue your turf to the base, make sure the base is clean and glue the entire turf (100%) to your chosen base. You must use a **urethane compatible** glue and the glue should be tacky before attaching the turf to the sub-base. It is very important to avoid moisture when applying the adhesive. Also, when installing a putting green the temperature must be over 60°.

Your turf is sent to you in a roll. Any turf, with a foam backing should never have a wrinkle from shipping, however, if it does, we suggest going over it with a lawn roller filled with 250 lbs of water. If you receive a turf with unitary backing (no foam) that has any wrinkles from shipping, you may want to heat the wrinkle with a hair dryer (don't burn or melt the backing).

Step 9: Fill the Putting Green with Sand

For Polypropylene Putting Greens Requiring Sand Fill

Make sure there are no large creases in your turf or it will effect the roll of the ball. Small creases will disappear when sand is applied. Sand filling the putting green will make the turf fibers stand straight up and allow the balls to run on top of the turf. Also, the sand will absorb the impact of shots chipped to the putting green.

Before spreading the sand, you will need to separate the fibers to allow for easy application and filling. Brush against the grain of the turf with a stiff push broom. You may need to brush it several times to get the fibers prepared for sand-filling.

Once you are ready to start filling the putting green with sand, keep the putting green completely dry. If the sand or putting green gets wet during this process, the sand will clump together and make it difficult for the sand to get between the fiber of the turf.

Fill the drop spreader with sand and start spreading it across the top of the putting green. Spread the sand in the middle of the putting green, working your way to the outside edges. When you have covered the whole putting green, use a push broom against the grain of the putting green to push the sand into the fiber. Do not apply too much sand at one time before brushing. A good rule of thumb is to spread 50lbs. of sand over an entire 12'x24' area and then brush it in before continuing. Be aggressive as you brush in all the sand and make sure you get the sand between the fibers. Your main goal is to get all the fibers of the turf to stand completely vertical. Too much sand can bury the fibers and may cause areas to have more sand than others. Work the area over with your broom until you have evened out all the sand.

Continue the sand or putting green-filling process until you have 1/8" - 1/4" of the fiber showing on the putting green. Use the bags of black sand last. The black and putting green sand are for aesthetic purposes only. As it covers the white sand, it will make the putting green fibers look denser and deeper.

Step 10: Cut Holes for the Cups

Locate the cup holes by pressing the turf with your hands until you feel the holes. Using a sharp utility knife with a brand new blade, start cutting the holes out of the turf by making an "X" inside the hole. Holding the turf from the center of the "X", cut tightly around the inside edge of the cup. It is very important to take your time cutting around the inner edge of the cups. Once you have cut the holes out of the turf, take a pair of scissors and trim the loose fibers around the cup. Congratulations. That's it! You are now ready to start practicing those critical putts on your personal putting green.



Step 11: Landscaping the Turf

Several forms of landscaping materials are available for your new putting green. You can choose from:

1. Sod
 2. Our fringe turf materials
 3. Landscape stones or brick
 4. Mulch material
 5. Railroad ties or similar wood border
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1. The easiest method of landscaping around your new synthetic putting greens would be to sod up to the turf and let the sod overlay the turf 1 - 2 inches.
 2. If you choose our fringe material, you can seam it to the perimeter of the turf. You can overlay your turf onto the fringe and cut through the turf and fringe material along the edge of your turf. You must pre-plan additional sub-base to add fringe material.
 3. Small landscape stones are very common. Remember to insert weed barrier under the stones. You can also use bricks or large stones to landscape your putting green. You can leave them loose or seal them together. You should plan for the brick or stone when designing your sub-base.
 4. We don't recommend mulch material because it is too messy for your backyard putting greens.
 5. We also do not recommend railroad ties or wood borders.

Installation of Sand Trap

Tools and Materials Required

Installing a sand trap in your yard is very easy and inexpensive. In fact, the installation of the 15'x12' sand trap in our example cost about \$65 in materials and only took 3 hours to complete. Many of the tools required for the installation are very common household items that you most likely already own. Other materials are available at your local home improvement stores.



Required tools and materials:

- Pick
- Shovel
- Weed killer
- Weed barrier
- Hammer & landscaping nails
- Gravel or pea gravel
- Extension cord or garden hose
- Can of orange or white spray paint
- Sand - Medium grade sandblasting sand

To determine the required amount of sand you need, use the following formula: one 100lb. bag of sand is needed for each 10 sq. ft. of area. Take your total square footage and divide by 10 to get the total number of 100lb. bags needed. The example below shows how to figure the required amount of sand for a 15'x12' sand trap.

15' multiplied by 12' = **180 sq. ft.**

180 divided by 10 = **18**

Therefore, **18** 100lb. bags of sand are needed for a 15'x12' sand trap.

7 Easy Steps to Installing Your Own Sand Trap:

Step 1: Determine a location

Step 2: Remove the grass in the marked area and create the slope

Step 3: Dig the drainage trench

Step 4: Fill the trench with the gravel

Step 5: Apply weed killer and secure weed barrier

Step 6: Fill the trap with sand

Step 7: Distribute the sand evenly