Turfgrass Installation Guide

Soil Preparation

Site Preparation

Turfgrass Installation

TPI TURFGRASS PRODUCERS INTERNATIONAL

Prepare the Soil

"Enhance a lawn's ultimate beauty and success by improving the soil before the installation takes place."

Why Is Good Soil Important?

For optimum growth, turfgrass needs just four things (in the proper balance) . . . sunlight, air, water and nutrients. Reduce any of these, or provide too much of any one and the turfgrass will suffer or die. In the right proportions, turfgrass will flourish, providing beauty to the landscape, a clean and safe place to play, plus many other benefits.

Grass obtains three of the four essential factors (air, water and nutrients) from the soil, but many soils are less than ideal for growing grass. Some soils contain too much clay and may be compacted. While compacted soils may be great for roads they are bad for grass. If air and water are not available to the roots it will inhibit the growth of the grass. Other soils may have too much sand. While sand may be beautiful on a beach, too much sand in the soil will prevent water and nutrients from staying in the root zone long enough for the plant to use them. Another frequently observed problem with many soils is the pH. The pH scale measures how acidic or basic a substance is. If the degree of acidity or alkalinity in the soil is too high or too low it can effect the availability of nutrients to the plant and prevent optimum growth.

What is The Best Soil for Turfgrass?

Loams, sandy loams and loamy sands, with a pH of 6.0 to 7.0 are the very best soils for producing a beautiful, high-use, low maintenance lawn. Unfortunately, this ideal soil mixture is seldom found on any property after construction.

How Deep Should The Soil Be ?

The absolute minimum depth of quality top soil for a care-free lawn is 4 inches (10 cm); however, for deeper root penetration and the benefits that they bring, the accepted standard is 6 inches (15 cm).

Can Soils be Improved?

Not only can most soils be improved, they usually need to be improved to get maximum results with only minimum effort.

The knowledge of what is necessary, the amount, and availability of materials, immediate costs and time are all factors that typically deter people from taking steps to improve soil.

Proper soil improvement and site preparation before any planting takes place, will make it easier for the grass roots to penetrate deeply and evenly. Deep roots will make the lawn more drought resistant, use water and nutrients more efficiently and result in a denser and healthier lawn as new grass plant shoots emerge. A dense lawn crowds out weeds and offers greater resistance to insects and disease.

"The beauty is in the blades, but the 'action' is in the roots."

How To Water (cont'd)

HOSE-END SPRINKLERS range in complexity, cost and durability, but are portable and can provide uniform and consistent coverage when properly placed and maintained.

During the growing/watering season, perform routine maintenance to check for blocked outlets, leaking or missing gaskets and misaligned sprinkler heads.

Water uniformity can be accomplished by simply

using 4 to 6 empty flat bottom cans (tuna fish, cat food, etc.), a ruler and a watch.

STEP #1 Arrange cans at random distances from any sprinkler.

STEP #2 Run the sprinkler for a specific amount of time, or until there is at least a 1/2 inch of water (1.3 cm) in one can.

STEP #3 Measure the amount of water in each can. Some variation is expected, but a difference of 25-30% or more between any two cans will require adjusting or relocating the sprinkler.

HOW TO WATER (cont'd)

Watering difficult areas such as slopes and under trees requires special attention to achieve maximum coverage and uniformity.

For **Slopes** refer to **Watering Tip #3** on reverse side.

For areas under and near trees you need to know the specific water requirements for trees as well as grass. Despite having deep "anchor" roots, trees take-up moisture and nutrients from the top six inches of the soil and compete with the grass for moisture. Watering sufficiently for the grass may, in some cases, result in the over-watering of some varieties of trees or too little water for other varieties.

A common solution is not to plant grass under the drip-line of trees, but rather use that area for perennial ground covers, flower beds or mulch beds.

HOW MUCH WATER

The amount of water your lawn requires and receives will determine its overall health, beauty and its ability to withstand use and drought. Keep in mind that too much water can ruin a lawn just as fast as too little water.

Once inch (2.5 cm) a week is a watering "rule of thumb" (by rain or watering) suggested for most lawns; however, this will vary between different turf species and even among cultivars within a specie, seasonal changes and different soil types.

How Much Water (cont'd)

Look at your lawn to determine its water needs. Grass in need of water will have a grey-blue cast, rather than a blue-green or green color. Also, footprints will still appear after a half-hour or more on a lawn in need of water, while on a well watered lawn, footprints will completely disappear within a few minutes. Inspecting your lawn frequently will help you determine its water requirements and avoid either over or under watering.

Water timers can help provide consistency and even be pre-programmed to turn on or off. Some timers measure the amount of time water flows through the device, while others measure the number of gallons used. Read the directions with the timer to determine how your's operates.

POST INSTALLATION CARE OF TURFGRASS

The following recommendations from **The Lawn Institute** (www.thelawninstitute.org) will help you maintain a thick, healthy lawn after natural turfgrass sod has been installed:

FERTILIZER

The type and quantity of fertilizer required for your lawn will depend on your grass variety. Cool and warm season grasses vary as do their nutrient requirements. Check with your Extension Service, local nursery or lawn and garden professional to determine what type of fertilizer is best for your lawn.

MOWING

The turfgrass can be mowed when it is rooted. Be sure to remove no more than 1/3 of the grass blade. The actual height of the cut varies depending on whether the grass is a cool or warm season and the type of grass.

Keep your mower blades sharp. Dull blades tear the grass blade instead of cutting it cleanly. These small rips in the turfgrass tissue can cause the grass to lose more water, increase irrigation needs, create stress, and make the lawn more vulnerable to diseases.

Care of Turfgrass (cont'd)

GRASS CLIPPINGS

Leave grass clippings. Contrary to popular belief, they do not cause thatch. (Thatch usually occurs only when turf is excessively fertilized and soil is compacted, cool and moist.) If you follow the 1/3 cutting rule grass clippings won't smother the grass plants. They will dry out and work their way down to the soil surface. These clippings return nutrients to the soil, resulting in less fertilizer use. They also cool the soil and help it retain water.

THATCH

Thatch is a layer of dead and decomposing plant tissue that forms above the soil. A thin layer (″ to l' inch) is beneficial to a lawn. It protects plant crowns and reduces compaction. But if the layer gets too thick, water, air and fertilizer can't get through to the soil and grass roots. Runoff increases and dry spots appear. Or when it's wet, the thatch can remain saturated and suffocate roots. Thatch usually occurs on turf that has been heavily fertilized, and is most common on poorly drained, compacted and acidic soils. Some species of lawn grasses are more prone to thatch problems than others. Severe thatch problems left unattended may eventually require the use of a dethatching machine. To prevent or minimize thatch problems, core aeration is an option depending on your situation.

AERATION

Core aerators punch small holes in the lawn allowing air and moisture to penetrate through the holes. It is most effective in late summer when temperatures are starting to cool and the soil is only slightly moist.

After aeration, leave the soil cores on the surface to dry. Then rake them to distribute the soil down through the grass to mix with and dilute the thatch. The mixing action of core aeration is similar to that provided by earthworms. Core aeration can also help increase water infiltration on compacted soils. Contract with a local landscape company for dethatching or core aeration service or check with your local equipment rental center.

Prepare the Site

Step-By-Step Site Preparation:

Follow these simple steps for a beautiful, healthy and trouble-free lawn:

1. Clear the site of all building materials (wood, cement,bricks, etc.) as well as any buried stumps, rocks, stones or other debris that are any larger than 2 inches (4-5 cm) in diameter.

2. Rough grade the entire area to eliminate any drainage problems on the property. This would include sloping the grade away from building foundations, eliminating or reducing severe slopes and filling low-lying areas. A tractor mounted blade and/or box are most often used for rough grading, but if the area is small, it can be done with hand tools.

The rough grading, will probably uncover more debris that should be removed.

3. Initial tilling to a depth of at least 2 inches (5 cm), should be completed prior to adding any topsoil or soil amendments. This will control most annual weeds, alleviate subsoil compaction, permit a bonding of the topsoil to the subsoil and improve root penetration as well as air exchange and water movement.

Prepare the Site (cont'd)

4. Add topsoil to achieve a total topsoil depth of 4-6 inches (10-15cm), after firming. The topsoil should be a loamy sand, sandy loam, clay loam. loam, silt loam, sandy clay loam or other soil suitable for the area.

5. Test soil for Ph and nutrients to determine if any pH correcting materials or nutrients are required.

Acidic soils A pH of less than 6 can be improved with the addition of lime. The type (or source) and amount applied will be determined by the level of acidity and should be based on the recommendations of a professional.

Alkaline soils A pH of 8 and higher can be improved with sulphur. As with acidic soil correcting materials, the type and amount of materials needed will be determined by the level of alkalinity and should be based on a professional's recommendation.

6. Apply fertilizer to correct any deficiencies following the product's recommended rate. To avoid root injury to new turfgrass, the fertilizer should be raked into the top 3-4 inches (7-10 cm).

7. Finish grade the entire site, maintaining the rough grading contours and slopes, with a tractor-mounted box blade for large areas or a heavy-duty rake for smaller sites.

8. Roll the area with a lawn roller one-third full of water to firm and settle the surface. Low spots should be filled to match the surrounding grade surface. If time permits, allow area to settle further with rainfall or by applying irrigation.

Turfgrass Installation

Cultivated turfgrass allows you to enjoy a lawn of instant beauty and maturity without the usual time-consuming hassles of seeding.

When purchasing turfgrass, consult a member of Turfgrass Producers International (TPI) in your area to be assured that you are getting the finest quality turfgrass available. A listing of turfgrass producers in your area is available by visiting: *www.TurfGrassSod.org*.

Step-By-Step Turfgrass Installation:

1. SOIL & SITE PREPARATION

Refer to Soil and Site Preparation on the reverse side.

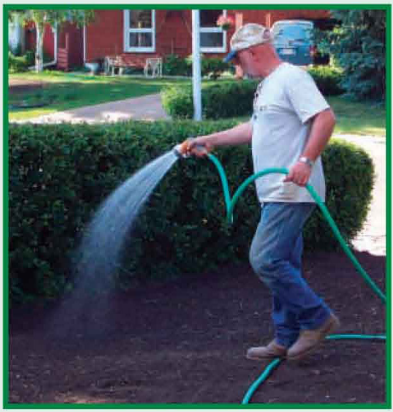
2. MEASURING & ORDERING

With a tape, measure the area of your planned lawn. Include these measurements on a sketch of the lawn area, with the length, width, and any unusual features. Your local TPI member will be happy to assist you in determining the amount of turfgrass sod you will need based on your sketch.

Schedule your turfgrass delivery after you have completed your soil and site prep and are ready to install the turfgrass. Prompt installation on the day of delivery is crucial.

3. TURFGRASS INSTALLATION

Prior to installing your turfgrass sod moisten the soil and install your lawn immediately upon delivery.



In hot weather, protect unlaid turf by placing stacks or rolls in the shade. If possible, cover with a moist cloth, or lightly water the unprotected turf.

Begin installing turf along the longest straight line, such as a driveway, sidewalk or patio. Butt and push edges and ends against each other tightly, without stretching. Avoid gaps or overlaps. Stagger joints in each row in a brick-like fashion, using a large sharp

knife to trim corners, edges, etc. Avoid leaving small strips at outer edges as they will not retain moisture. On slopes, place the turf pieces so they run across the slope rather than up and down the slope.

Turfgrass Installation (cont'd)

To avoid causing indentations or air pockets avoid repeated walking or kneeling on the turf while it is being installed or just after watering.

After installing the turfgrass, roll the entire area to improve turfgrass/soil contact and remove air pockets.

4. WATERING

Give your new lawn at least 1-inch (2-3 cm) of water within a half hour of installation. Water daily or more often, keeping turf moist until it is firmly rooted (about 2 weeks). Then less frequent and deeper watering should begin.

Weather conditions will dictate the amount and frequency of watering. Be certain that your new lawn has enough moisture to survive hot, dry, or windy periods. Water areas near buildings more often where reflected heat dries turfgrass.

CAUTION

During the first few weeks, avoid heavy or concentrated use of your new lawn. This gives the roots an opportunity to grow into the soil and ensures the turf will remain smooth.

Turfgrass Watering Guide & Post Installation Care

TPI TURFGRASS PRODUCERS INTERNATIONAL

WATERING

Water is essential to all life . . . too little water and we die, too much water and we drown. The same is true of the grass in our lawns. Water makes up 70% to 80% of the weight of grasses and the clippings alone are nearly 90% water. While most people are concerned about not watering their lawns enough, the fact is, more lawns are damaged by overwatering.

WHEN TO WATER

It is essential to begin watering new turfgrass sod within a half hour after it is installed or placed on the soil. Apply at least 1 inch (2.5 cm) of water so that the soil beneath the turf is very wet. Ideally, the soil 6 inches (15 cm) below the surface will be moist.

Watering Tip #1

Pull back a corner of the turf and push a screwdriver or other sharp tool into the soil. It should push in easily and have moisture along the first 6 inches (15 cm), or you need to apply more water.

When To Water (cont'd)

Watering Tip #2
Make certain the entire lawn is receiving water. Corners and edges are particularly vulnerable to drying out and are easily missed by many sprinklers. These sections dry out faster than the center portion of a new lawn. Areas near buildings also dry out faster and may require more water.

Watering Tip #3
Runoff may occur on some solid or sloped areas before the soil is adequately moist. To conserve water and ensure even irrigation, turn-off the water if runoff begins. Wait 30 minutes to an hour and restart watering, repeat as needed. For the next two weeks (or until the turf is well rooted), keep the soil below the turf moist with daily (or more frequent) waterings of approximately one-quarter inch (0.6 cm) each. Increased watering may be required during hot, dry or windy periods.

Watering Tip #4
As the roots of the turf begin to penetrate the soil, it will be difficult to pull back the corner to check beneath the turf to see if water is penetrating the soil, but you can still use a sharp tool to check moisture depth by pushing it through the turf and into the soil.

Watering Tip #5
Water as early in the morning as possible to take advantage of the grass's normal growing cycle. Morning is ideal because of lower wind speeds and less water is lost to evaporation. Watering in the evening is discouraged because water remaining on the grass can promote disease and fungus.

Watering Tip #6
Infrequent and deep watering is preferred to frequent and shallow watering. Roots will only grow as deep as their most frequent available water supply. Deeply rooted grass has a larger "soil-water bank" to draw moisture from and this helps the grass survive drought conditions and hot weather that dries out the upper soil layer. During the remainder of the growing season, most lawns will do very well with a maximum of one inch of water a week from either irrigation or rainfall.

When To Water (cont'd)

Soil conditions may dictate irrigation be applied in two settings, approximately two to three days apart. This amount of water is all that is required for healthy grass, providing it is applied evenly and wets the underlying soil to a depth of 6 inches (15 cm).

HOW TO WATER

Proper watering techniques are important. Here are several helpful suggestions:

Avoid hand watering because it cannot provide uniformity. The only possible exception to this guideline would be the need to water the surface of the grass to cool it, or to provide additional water near buildings or other heat-reflecting surfaces.

Understand each sprinkler has its advantages and disadvantages. Proper use is determined by the type of sprinkler you select.

IN-GROUND SYSTEMS require professional installation, routine adjustments and proper maintenance to be effective. The greatest mistake made in most in-ground systems is the "set it and forget it" philosophy that fails to account for changing seasonal water requirements to maximize turf growth or allows the system to operate following an adequate rain. Another frequent problem is when sprinkler heads get out of alignment and apply water to the sidewalk, street or house-siding, rather than to the lawn.