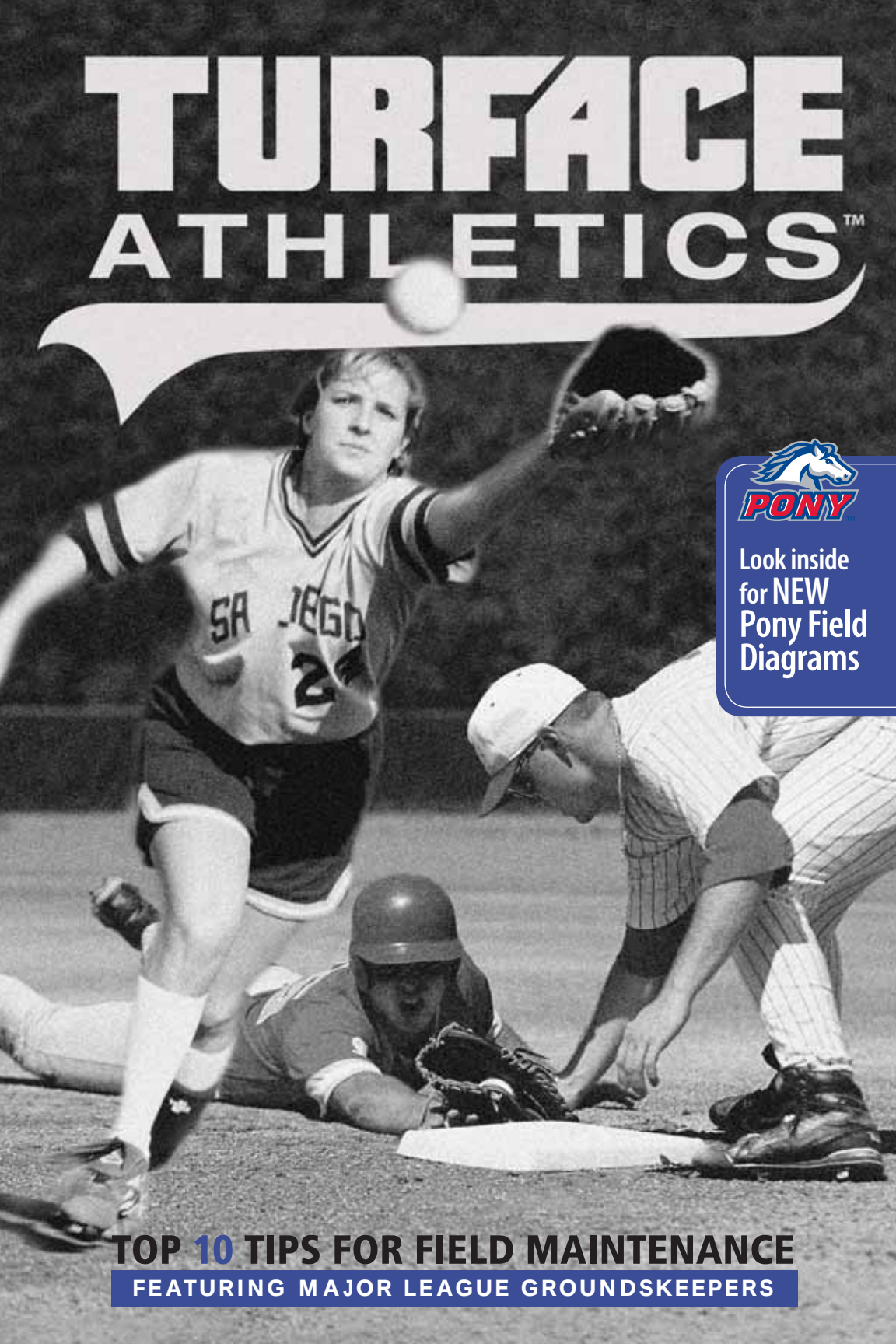
TURFACE ATHLETICS™



Look inside for NEW Pony Field Diagrams

TOP 10 TIPS FOR FIELD MAINTENANCE

FEATURING MAJOR LEAGUE GROUNDSKEEPERS

TURFACE ATHLETICS

THE ULTIMATE STANDARD

for Maintaining Athletic Performance and Safety

Serious competitors at every level want the freedom to perform to their fullest. That's exactly what Turface® delivers, through wet springs and dry summers, on more fields across America than any other brand. For over 40 years no one has done it better.

Become part of ***Turface Athletics*** and dramatically improve your playing surface – guaranteed. You'll get a broad range of infield and soil conditioners to prevent rainouts and maximize safety on any athletic field. You'll also be connected to the industry's largest network of sports field knowledge.

- **TURFACE** is a sports field conditioner, not crushed aggregate like brick dust and vitrified clay which are commonly used as infield colorants. If you want to use these materials, **TURFACE** should be incorporated into the mix to prevent compaction and to improve moisture absorption.
- **TURFACE** is the #1 choice at every level of baseball and softball providing Major League color and performance.
  - ✓ Preferred by Major League and Minor League groundskeepers.
  - ✓ Relied on by thousands of high school and college coaches.
  - ✓ Used by thousands of park and recreational facilities.
  - ✓ Chosen above all products for Olympic baseball and softball fields.

TURFACE® MVP®

Improves Drainage & Reduces Compaction

TURFACE MVP fights infield compaction that leads to running, sliding and bad ball hop injuries. MVP absorbs it's weight in water, allowing play to resume quickly after the rain stops.

TURFACE® Pro League®

Patent Number 6,096,126

The Standard for Creating The Ultimate Fielding and Sliding Surface

- Smaller uniform particle size tested and approved by Major League groundskeepers.
- Superior drainage and absorption.
- Delivers the color, safety and performance of a Major League infield.

TURFACE® Quick Dry®

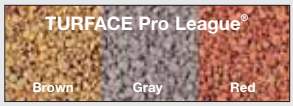
Eliminates Puddles & Standing Water

After a rain, **TURFACE** Quick Dry makes muddy, slippery conditions a thing of the past. Quick Dry will not cake, become slippery, or turn your field rock-hard, and works over and over.

New! Pro League Red

Color • Conditioning • Performance

- Combines rich red color with proven infield conditioning.
- Outperforms crushed aggregates by absorbing more water to prevent rainouts.
- Requires half the tonnage versus aggregates to obtain 1/4" coverage.



1. Know Your Field

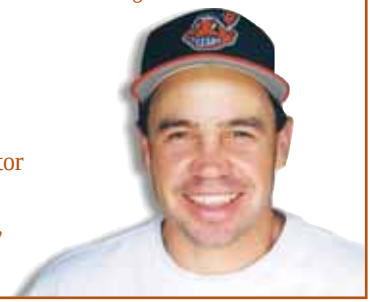
*from **Brandon Koehnke, Head Groundskeeper** of the **Cleveland Indians***

The #1 concern for a coach and a grounds manager is the safety of the athletes that play on their fields. The only way to accomplish this is to walk your field every day and look for hazards.

***TIPS FROM THE PROS** on Record Keeping*

My goal with record keeping is to develop better timing and fine tune my practices.

- Good timing results in maximum performance of staff, equipment and the field.
- A calendar should track daily jobs, attendance, injuries, performance and field usage.
- Good staff records are never disputable.
- Make a restricted use pesticide form.
- Keep equipment logs for each piece of equipment.
- Replace defective equipment immediately and log this work.
- Monthly soil analysis provides a baseline and ongoing guide to monitor your inputs.
- Record fertilizer and pesticide applications. Include timing, analysis, weather, etc.

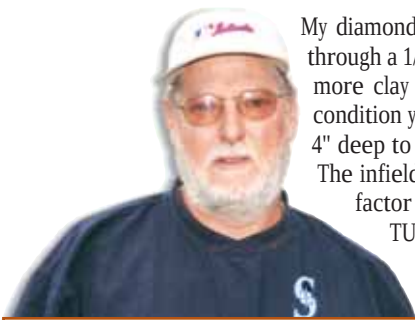


2. Create Safe, High Performance Infields

*from **Bob Christofferson, Head Groundskeeper** of the **Seattle Mariners***

For over 40 years, TURFACE has set the standard for sports field maintenance. Providing affordable solutions to field maintenance problems. With TURFACE incorporated into your sports fields, athletes will have the opportunity to perform at their highest levels. Compaction, bad ball hops and rainouts are significantly reduced.

Soil Selection for My Major League Diamond



My diamond contains a 75% clay, 5% silt, and 20% sand mixture which passes through a 1/8" screen. There should be no stones. My mix contains significantly more clay than is typically used at the park and rec level. It's important to condition your soil by incorporating TURFACE *Pro League* at about a 20% blend, 4" deep to absorb excess water and to keep the clay from becoming too hard. The infield needs to be consistent throughout nine innings. Rainouts aren't a factor at Safeco because I have a retractable roof, but I still recommend TURFACE as an excellent water management tool. It will prevent rainouts and help maintain a proper moisture level in your field.

***JAR TEST** for Determining the Sand, Silt and Clay Composition of Infield Soils*

- Take approximately 4-5 plugs of soil samples, from the surface to the bottom of your infield mix, and blend them all together.
- Fill a jar with 4" of the infield mix.
- Fill the jar with water to a couple inches above the mix. Shake until the soil is thoroughly mixed in water.
- Let stand for a few hours. Every inch = 25%.

TURFACE Baseball and Softball Renovation

TURFACE is used by more groundskeepers than any other sports field conditioner because of the quality and conditioning TURFACE provides to the infield soil. TURFACE ensures a safe field that holds up to rain and gives athletes a chance to perform at their best. Expect major league results when you incorporate TURFACE MVP into your diamonds.

TURFACE MVP: Complete Infield Renovation

***STEP 1**: Moisten the skinned area. Spread TURFACE MVP bags evenly throughout the skinned areas to be renovated. Depending on the amount of TURFACE required, align the bags 42" to 60" apart in both directions.*

***STEP 2**: Once TURFACE MVP bags are properly positioned, open bags and dump material. Remove all TURFACE bags from the field.*

***STEP 3**: With a blade, mat drag, or landscape rakes, level all of the TURFACE piles and spread evenly across the surface.*

***STEP 4:** Rototill the TURFACE MVP into the existing infield mix to a depth of 3" to 4". Drag the infield with a mat drag to break up clumping. Level the field.*

***STEP 5:** Roll the infield with a one ton roller or a hand roller. This helps speed up the settling process, allowing the field to firm up more quickly.*

***STEP 6**: Slowly drag the infield twice with a mat drag. This will loosen the surface to a desired consistency and level any visible low spots. After, rake or sweep all edges to remove any loose material from the turf. This will prevent any lips from forming.*

TURFACE MVP APPLICATION RATES TILLED 4" DEEP

Skinned Area:

Regulation	Baseball* (in tons)	Softball (in tons)	Little League* (in tons)
High Clay Content	15	12	5
High Sand Content	10	9	3
High Clay Content 1-1/2 tons of TURFACE MVP per 1,000 sq. ft.			
High Sand Content 1 ton of TURFACE MVP per 1,000 sq. ft.			

*Assumes grass infield; double the amount of Turface if completely skinned.

Other TURFACE Applications:

Regulation	Baseball (50 lb. Bags)	Little League (50 lb. Bags)
Pitcher's Mound	1 - 2	1
Home Plate	1 - 2	1
Base Paths	2 - 3	1 - 2

Rake or nail drag into the surface of these areas.

TURFACE MVP Progressive Infield Renovation (4-5 years)

***STEP 1**: Lightly moisten the skinned area to loosen the surface in preparation for mixing the TURFACE MVP into the soil. Do not soak.*

***STEP 2**: Spread 2-3 tons of TURFACE MVP, concentrating on traffic areas. Level the material spread before mixing.*

***STEP 3**: Nail drag the infield twice, working the TURFACE MVP into the top 1-1.5 inches of the playing surface. This will ensure that the TURFACE is incorporated evenly.*

Winning on a Small Budget with TURFACE

Lack of funds are all too common for coaches and groundskeepers and result in decisions to purchase brick dust/vitrified clay, limestone screenings, shale, sand or other by-products to try and keep a field from becoming unplayable during rain. These products do not condition a field like TURFACE and may lead to larger problems down the road. TURFACE MVP has a degradation factor of 3.5% breakdown over 20 years, lasting season after season to condition fields. If your budget prevents you from doing a complete renovation apply 2 to 3 tons of TURFACE each year concentrating on the problem areas first. You will see immediate improvement while working your way to a completely renovated field in 4 to 5 years.

3. New Construction (Build It Right the First Time)

*by **Grant Trenbeath, Head Groundskeeper** of the **Arizona Diamondbacks***

Being able to build a field from scratch is a groundskeeper's dream. It is a chance to eliminate any problems from the start. You only get one chance at building a field, so you have to make the most of the opportunity. Money spent wisely in construction will save money in years to come.

- Sub-grade should direct water away from the infield and toward drainage lines.
- Trenches need to be graded so drain lines gravity flow water off the field.
- Install vertical blow out access to drain lines for easy cleaning in case they clog.
- Place quick coupler valves during irrigation layout for easy hand watering later. Middle of the infield, and around the perimeter of the outfield.
- The root zone profile for sand based fields should have a USGA® sand amended with PROFILE Porous Ceramic that holds nutrients and moisture in the root zone.
- When preparing a final grade, use laser equipment for a precise slope. Consider the thickness of the sod if you do not seed or sprig before finalizing the grade.
- Infield soil should be a good clay/sand blend for your region.
- Condition with TURFACE MVP or *Pro League* to help with drainage and to provide a safe, soft surface.
- TURFACE *Pro League* dragged into the top 1" protects my clay base by retaining moisture and providing a very smooth surface.
- Use pure clay on the mound and batter's boxes. Topdress with a light coating of TURFACE.

4. Make Puddles a Thing of the Past

Luke Yoder** is the **Director, Field and Landscape Maintenance** of the **San Diego Padres

TURFACE Quick Dry is specially designed to absorb infield puddles. Quick Dry is sized for greater surface area to eliminate puddles instantly. Unlike corn cob absorbents, Quick Dry will not harden when dry and becomes a part of your infield, working over and over.

Puddle Prevention

Proper grading and daily maintenance will help eliminate low spots.

Bring in more infield mix and TURFACE MVP to level the area. Tamp or roll these areas to match the firmness of the surrounding soil.

Large Puddles

Fill a 1" hose with water, surround the puddle, and pull the water off the back edge of the skinned infield. Sponge rollers also work well. Then, spread TURFACE Quick Dry to soak up any remaining water. Rake into the infield mix.

This process will keep your field level and will minimize the amount of infield material pulled into your turf.

Puddles in Grass

To remove water from turf areas TURFACE MVP or *Pro League* should be topdressed and raked over the puddles to absorb water.

To prevent puddles, core aerify and topdress with TURFACE dragging it into the holes. Frequent topdressing with sand and TURFACE will raise the low areas and help stop puddle formation.

***TIPS FROM THE PROS** on Puddle Removal*

- Maintain grade around bases and in player positions and fill low spots with infield mix and TURFACE MVP or *Pro League*.
- TURFACE Quick Dry works over and over again.
- Remove the puddle as soon as possible to prevent area from getting saturated.
- Minimize or remove lips so water can drain away from skinned areas.
- Keep the infield moisture level lower when rain is expected.
- Keep mounds and home plate areas covered since these high clay areas are the hardest to dry out.

For Turf, use TURFACE MVP® or PRO LEAGUE®

5. Maintain the Perfect Base Path

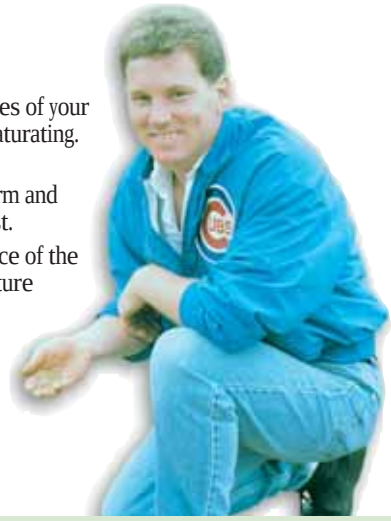
*from **Roger Baird, Head Groundskeeper** of the **Chicago Cubs***

Keep Base Paths Firm

A firm base path means a fast base path. With this in mind, it is important to keep your base paths firm and level. We use 100% clay on the first and third base paths. High School level may want to use 80% clay and 20% TURFACE for a softer surface. Do not let lips form on the base path. Every three or four days you should sweep the soil out of the grass. Use a hose to wash the soil out of the grass if the lips become bigger.

TIPS FROM THE PROS for Outstanding Base Paths

- Till 2 bags of TURFACE MVP or *Pro League* into the top 2 inches of your first and third clay base paths. Moisten base paths without saturating. Roll your base paths until firm.
- Frequently level, water and roll the first base area to keep firm and prevent bad hops. There's less clay here, and rolling is a must.
- Spread 2 bags of TURFACE MVP or *Pro League* over the surface of the base paths and nail drag into the top 1/2" for maximum moisture control and surface consistency.
- If rain is expected add another bag of TURFACE MVP or *Pro League* so you do not have to come out to add TURFACE during a light rain.
- Hand drag base paths length wise to prevent lips.



IVY on the Outfield Wall The grounds crew is in charge of the ivy. The ivy was planted in 1937 and consists mostly of Boston Ivy. Every week it takes 16 hours to trim the ivy at the top of the wall and around the doors and numbers. He uses a hand held trimmer to cut each strand he pulls from the wall. They collect clippings in the fall and cultivate them at home over the winter. These new plants are used to fill areas that need repair. Strong vines are redirected to grow into weak areas during the season. They fertilize with triple 19 twice per year with a shot of iron in the spring. In the fall the vines begin to lose their leaves and we are the only park in the major league that has to rake leaves before games.

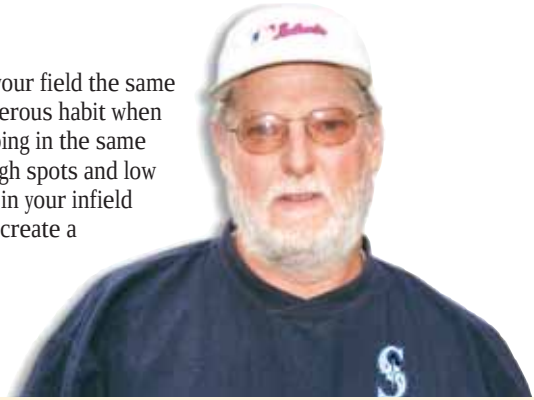
6. Use Proper Dragging Techniques

from ***Bob Christofferson, Head Groundskeeper*** *of the* ***Seattle Mariners***

Poor dragging practices can cause several maintenance problems on an infield. A nail drag and a mat drag are both needed. Nail drags are vital to break up a hard surface and to incorporate TURFACE into the top of the soil mix. Mat drags provide a finished surface.

Dragging Patterns

It is easy to fall in the trap of maintaining your field the same way each and every day. This can be a dangerous habit when dragging your infield. By starting and stopping in the same locations every time you drag your field, high spots and low spots are created causing inconsistencies in your infield surface. This may cause standing water or create a hazard for your athletes.



TIPS FROM THE PROS on Infield Dragging

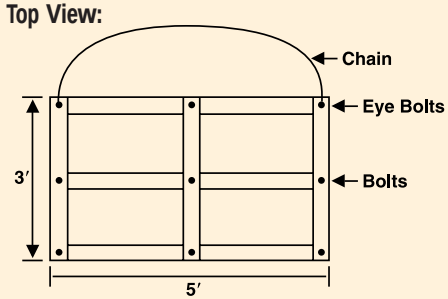
- Remove bases and place plugs into the sleeves.
- Rake down high areas around bases with the back of your rake.
- Water your infield and let it penetrate the soil. Hold hose high to simulate rain and have someone hold the hose to keep it from dragging on your infield.
- Nail drag first to loosen the top 1/2 to 1 inch of TURFACE and infield soil mix.
- Begin mat dragging after the infield has dried for a finished surface.
- Alternate your dragging patterns to prevent high and low spots especially where you stop.
- Drag slowly and stay 6 inches from the turf to achieve a manicured appearance and to avoid a lip buildup.
- Alternate start and stop locations daily.
- Match drag widths to base path dimensions so one or two full passes completes the task.
- Hand dragging the edges prevents lip build up and is necessary on the mound, base paths and plate areas.

HOW TO BUILD A NAIL DRAG

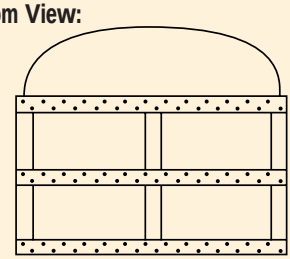
A nail drag is the ideal tool for maintaining a smooth and consistent infield surface. So, by using a nail drag on a TURFACE infield, your field will play like the pros. Use the following components to build your nail drag:

- Build with 2″ x 4″
- Pre-drill straight holes for nails
- Use 40 penny nails
- Stagger nails 1¾″ apart–2 rows in each board
- Use 1″ x 4″ to cover 2″ x 4″ on top to hold in nails

Top View:



Bottom View:



7. Build Safe, Durable Mounds and Batter's Boxes

from ***David Mellor, Director of Grounds*** *of the* ***Boston Red Sox***
and ***Ed Mangan, Head Groundskeeper*** *of the* ***Atlanta Braves***

The three areas of a baseball or softball field that are involved in every pitch of every game are the pitching mound, the batters and catchers boxes. The intense activity these areas receive during a game require special packing clays that have a high degree of plasticity to provide the best footing and wear resistance. TURFACE PROFESSIONAL MOUND CLAY and TURFACE MOUNDMASTER Blocks are virgin clay without any additives that diminish a clay's quality. Construct your mound to the required specifications for your league.

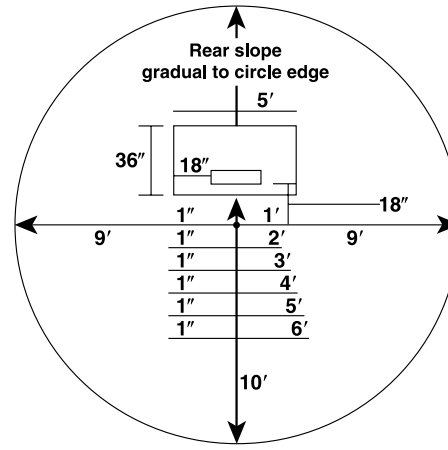
PROPER PITCHING RUBBER ALIGNMENT

The front of the pitching rubber must be 60 feet 6 inches from the apex (point) of home plate and the top of the rubber, should be 10 inches above home plate. Follow these simple steps to set up your pitching rubber:

1. The pitching rubber is 24 inches long. Take a pencil and mark a line down the center.
2. Take a string from the apex of home plate and extend it to the second base peg.
3. Measure 60 feet 6 inches from the tip of home plate and sink a spike. This marks the front of the rubber.
4. Take a transit level and obtain a reading off home plate. The top of the pitching rubber must be 10" above home plate. Build or reduce height of the mound accordingly. If a transit level is not available, drive a stake at the apex of home plate measuring 10" high. Run a tight string over the pitching rubber and hang string level. Adjust the rubber height until line is level.
5. Square the rubber into position by taking a measuring tape and measure from the front left corner of home plate to the front left corner of the pitching rubber. Do the same on the right side. When these two measurements equal 59′ 1″, the rubber will be squared. Make sure that the rubber measures 12 inches on each side of the anchored spike.

Hint: If building a mound from scratch, it is a good idea to place a solid concrete block under the rubber to keep it from shifting.

Basic Mound Specifications



90′ field
- *Height of Mound: 10" above Home Plate*
- *Distance from Apex of Home Plate to Front of Pitching Rubber: 60'6"*

80′ field
- *Height of Mound: 8" above Home Plate*
- *Distance from Apex of Home Plate to Front of Pitching Rubber: 54'*

70′ field
- *Height of Mound: 6" above Home Plate*
- *Distance from Apex of Home Plate to Front of Pitching Rubber: 48'*

60′ field
- *Height of Mound: 4" Mustang League; 6" Little League above Home Plate*
- *Distance from Apex of Home Plate to Front of Pitching Rubber: 40-46'*

50′ field
- *Height of Mound: 4" above Home Plate*
- *Distance from Apex of Home Plate to Front of Pitching Rubber: 35'-38'*

TURFACE PROFESSIONAL MOUND CLAY® Available in RED or GRAY

from ***David Mellor Director of Grounds*** *of the* ***Boston Red Sox***

TURFACE PROFESSIONAL MOUND CLAY should be used in the table and landing areas of the mound. The depth of your mound clay depends on the level of play. 14 years old or younger require a 4 inch depth and 6 inches are required for older players. 3 to 4 inches should be used on the flat table around the rubber. I like to fan out the clay into the landing areas from 45 to 50 degrees off of each front corner of the rubber. This width will ensure pitchers with odd follow throughs will not be injured by landing on soft spots on the mound.

Mound Repair

Daily maintenance is required if you have daily play. To repair your mounds sweep out the hole to expose the pure packing clay. If topdressing remains on the clay, new clay will not bind to the old clay and will tear out easily. Sharpen the teeth of an iron rake and use this to shave down high spots that have formed on the mound. Dampen the hole, add new clay, tamp with the back of a spade and then use a mound tamp to firm the new clay. I topdress with a very light coat of infield mix and *Pro League* to prevent a slick mound. Batter's and catcher's boxes require the same care.

TIPS FROM THE PROS on Mound Repair

- Use a mound slope board.
- Place slope board 6 inches in front of rubber and begin 1-inch drop for every 12 inches toward home plate.
- Sharpen the back of the teeth of an iron rake on a grinding wheel to make shaping and cutting an easy task.
- Remove and discard the topdressing on your mounds (we do it every three games) to maintain the integrity of the TURFACE PROFESSIONAL MOUND CLAY.

- To measure the distance of home plate to the rubber, measure from the apex of home plate to the front of the rubber.

TURFACE PROFESSIONAL MOUND CLAY® Installation

Easy steps to safe and durable pitching mounds and batter's boxes. Tools required: tamp, rake, shovel, broom, watering can, and a slope board for the mound.

STEP 1: *Excavate the front slope of your mound to a 4" to 6" depth. Batter's boxes and catcher's box to a 4" depth.*

STEP 2: *Moisten the bottom of the hole with water. Add an inch of TURFACE PMC. With a rake, cut into the soil for proper bonding. Tamp firmly. Lightly moisten but do not drown. Tamp again.*

STEP 3: *Evenly add an inch of new PMC to the area you are working. Tamp until firm. Water the area, but do not drown. Repeat STEP 3. As you near the last layer, reduce the amount of water you add to the PMC.*

STEP 4: *As you reach the top of your PMC area on the mound, use a rake to rough grade the slope in front of the mound. Tamp or roll the slope for a smooth surface. Add PMC to any low spots and use your rake to cut down the high spots. After leveling, tamp or roll again.*

STEP 5: *Add a final coating of water on the PMC areas once all grades and slopes are set and rolled. Finally, topdress all PMC areas with your infield mix and TURFACE MVP to match the color of your infield.*

Pitcher's Mound Approximate Number of 50 lb. Bags

Table	4" depth 11 bags	6" depth 17 bags
Landing Area	4" depth 20 bags	6" depth 30 bags
Batter's Boxes	4" depth 38 bags	6" depth 58 bags
Catcher's Box	4" depth 13 bags	6" depth 20 bags
TOTAL	**4" depth 82 bags**	**6" depth 125 bags**

Number of bags may vary depending on the size of the mound and batter's box. One pallet contains 40 bags. One bag weighs 50 lbs.
One bag covers 5 square feet x 1" thick (compacted).

TURFACE MOUNDMASTER® BLOCKS Available in RED or GRAY

*from **Ed Mangan, Head Groundskeeper** of the **Atlanta Braves***

With TURFACE MOUNDMASTER, you can easily maintain superior pitching and batting surfaces. TURFACE MOUNDMASTER is a high quality packing clay formed into easy to use blocks for excellent durability. By building and maintaining your pitcher's mound and batter's boxes with TURFACE MOUNDMASTER, you are providing your athletes with safe and consistent playing surfaces pitch after pitch.

I use two layers with the top layer laid on a diagonal over bottom layer. A single layer for younger players will be adequate.

TIPS FROM THE PROS *on Mound Repair and Batter's Boxes*

- Moisture is the glue that holds clay together. Cover your mound when not in use and use a watering can to moisten the old clay to get it to bind to the new clay.
- Rub down the moist blocks with your hands and tamp lightly to bind blocks together.
- Watch your pitchers stride and landing foot to determine how far out to bring the blocks.
- Cut nuggets out of the MOUNDMASTER Blocks and store in a bucket with wet towels over them to use for repair or use TURFACE Professional Mound Clay for repairs.
- Bring a light coating of your infield mix and TURFACE MVP over the top of the MOUNDMASTER Blocks.

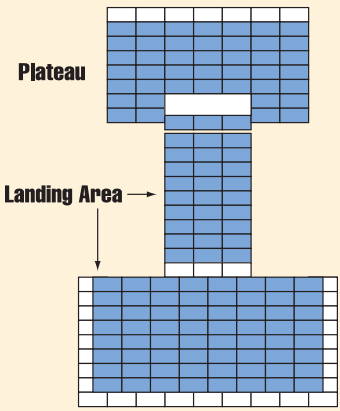
Excavate the Batter's Box 3" deep.

Install MOUNDMASTER Blocks, tamp, water and allow to soak in for 20 minutes.

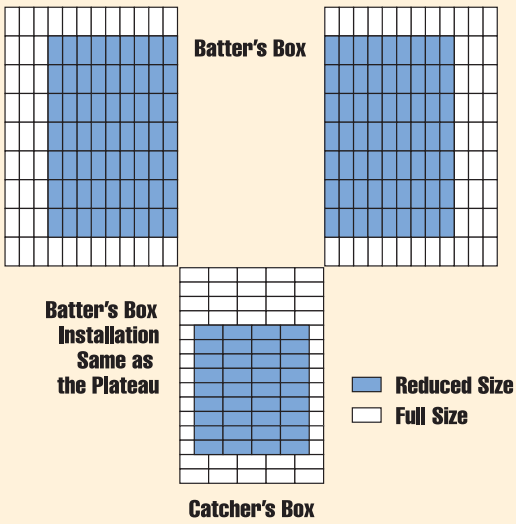
Apply a thin layer of Professional Mound Clay (match color to blocks) moisten, tamp.

Cover with a thin layer of infield mix to finish grade.

Pitcher's Mound



Batter's/Catcher's Box



MOUNDMASTER® Installation

When installing mound master blocks, it is important to study your pitchers. Place the blocks 10 inches before the shortest stride and 10 inches wider than the longest landing foot. Remember pitchers may pitch from either edge of the rubber. The entire table around the mound should be built with MOUNDMASTER Blocks.

Installation Sequence

Outline your landing areas and plateau using a mound gauge to obtain the desired slope. Excavate 3" below the surface. Level and tamp firm.

Excavate the landing area and be 10" wider and longer than the longest stride of your pitchers. Blocks should be within a 1/2" of the surface.

Wedge the blocks into position 1/2" below the rubber.

Fill around blocks with adjacent soil and tamp to wedge together.

Tamp and water thoroughly several times for about an hour. Allow water to be absorbed into clay so blocks swell. Tamp firmly between watering.

Apply a thin layer of Professional Mound Clay (match color to blocks) moisten and tamp.

Rake MVP and infield mix over the surface and hand drag.

To repair holes, cut up blocks or use Professional Mound Clay. Before repairing, sweep out hole to expose pure packing clay. Moisten exposed packing clay, then add repair clay.

Cover your mound with a plastic tarp to hold moisture.

Pitcher's Mound Applications

Approximate Number of Blocks Needed

	Full Size	Reduced Size
Plateau	53	46
Landing Area	111	91
Total Blocks	164	137

Batter's Box Applications

Approximate Number of Blocks Needed

	Full Size	Reduced Size
Batter's Box (Total)	216	126
Catcher's Box	75	36
Total Blocks	291	162

300 blocks per pallet (blocks are 2 1/2" x 4" x 8").

Caring for Material:

When not in use, store blocks under a damp towel or burlap sack while wrapped in its plastic covering. This will keep your TURFACE MoundMaster moist and workable. Avoid storing in direct sunlight. Avoid freezing.

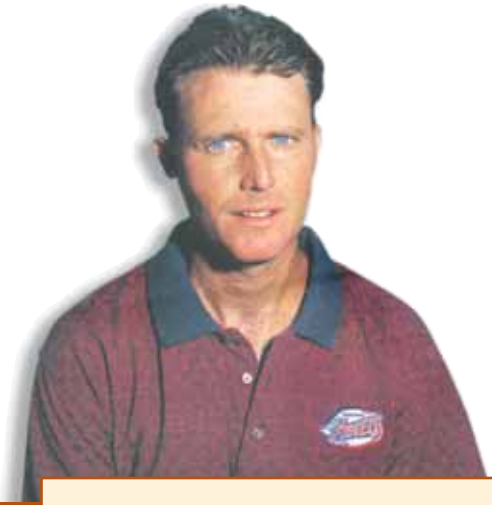
8. Water Is Your Most Important Maintenance Tool

from ***Barney Lopas, Head Groundskeeper*** *of the* ***Los Angeles Angels of Anaheim***

Proper infield maintenance is virtually impossible without water. Proper infield moisture is the key ingredient for a professional quality infield.

Water Infield Daily or As Often As Possible

I'm fortunate to have a skinned infield irrigation system. If you are building or renovating a new field, I recommend installing one. If the infield is not watered properly, it will become rock hard or powdery. Neither is good for the athletes. To maintain good moisture levels start early in the day. I start watering 8 to 10 hours before a game and water heavily. Water must migrate deeply into the infield soil. Moisture provides your infield with body and holds the soil together resulting in firm footing for the athlete. Weather will dictate how much water is needed to be applied right at game time, and I hand water with a hose before the game. Incorporating TURFACE MVP or *Pro League* is essential for a conditioned infield because TURFACE absorbs moisture and slowly releases it back into the soil. TURFACE helps regulate the need for watering.



Water Turf Heavily Once a Week

Once you have established turf on your field, it is best to irrigate heavily one day a week. This forces roots to seek water down in the soil, resulting in a stronger, deeper root system. REMEMBER: Water your turf immediately after an event for improved recuperation.

Water Pitcher's Mound Often to Keep Clay Moist

Because your pitcher's mound and batters' boxes are constructed with heavy packing clay, it is necessary to keep them moist to prevent them from cracking. Covering your pitcher's mound and home plate areas after a light watering is the ideal maintenance practice. If you do not cover these areas, coating them with a light covering of TURFACE MVP or *Pro League* can assist in maintaining moisture levels in these areas.

TIPS FROM THE PROS

- Water early in the day, (8 to 10 hours before game time) slowly and heavily to let water migrate deeply into the soil profile.
- Condition your soil with TURFACE MVP or *Pro League* to absorb moisture and slowly release it back into the soil. This maintains a uniform release of moisture for optimum firmness.
- Nail drag in a couple of tons of TURFACE each year to help regulate surface moisture.
- Have someone hold your hose to avoid dragging across the infield.

9. Use the Right Equipment

*by **Floyd Perry, President** of **Grounds Maintenance Services***

Using the right equipment can save time and money.

- **Mound Tamp.** A necessity to repair the heavily stressed clay in the mound and batter's boxes. If the clay is too moist and sticking to your tamp, wrap a plastic seed bag to the bottom of the tamp. Consider a 6" x 14" tamp.
- A **Soil Sifter** will separate rocks and unwanted particles while saving TURFACE and your good infield mix.
- The **Mini Chalker** is a quick and easy way to mark batter's boxes.
- Use a **Cocoa Mat Drag** for a smooth finished surface.
- A **Push Edger** or **Diamond Blade** will speed your edging for a professional quality look.
- **Water.** The most important tool available for groundskeepers. Using a 1" diameter hose with a quick coupler allows you to get more water on your field in a shorter amount of time.
- **Aluminum Finishing Rakes** are efficient and provide a quality finish.
- **Walk Behind Mowers** should be used on the infield grass to avoid ruts from tractors.

For more information go to www.gmsforsportsfields.com or call (407) 903-1220.

6" x 14" Mound Tamp

Soil Sifter

Mini Chalker

Cocoa Drag

Push Edger

10. TURFACE for Outstanding Turf

from ***Ken Mrock, Head Groundskeeper*** *of the* ***Chicago Bears***

"My PROFILE / sand soil mix is performing way beyond my expectations. The root mass is incredible!"

"Manipulating and designing soils to resist compaction and increase drainage are the keys to having athletic fields hold up to intense use. TURFACE and PROFILE provide a unique opportunity to improve native or sand soils by adding pore space, moisture retention, nutrient holding capacity, and increasing drainage."

– Ken Mrock, Head Groundskeeper of the Chicago Bears

Core-Aerify

Aerification is the most important turf maintenance practice. It helps to loosen compacted soils so air and water can move freely in your root zone. Core-aerify in two directions. (REMEMBER: Avoid aerating in high heat or on the day of an event.)

Over-Seed

Every time you aerate and topdress you should take the time to over-seed these areas to strengthen your turf. Select a grass variety with your local TURFACE distributor.

Topdress with TURFACE MVP® or Pro League®

TURFACE is the perfect topdressing material for compacted areas. Its tremendous porosity and angular shape help resist the compaction of soils providing a loose and friable root zone even under intense athletic traffic. TURFACE holds moisture and nutrients at root level promoting strong root growth. The result is healthy turf coverage all season long. Topdress the aerified areas with 500 lb. of TURFACE per 1,000 square feet. This should be done twice a year, once in the Spring and once in the Fall.

Absorb Water and Mud with NEW Profile™ Porous Ceramic Field & Fairway

Make fields safe and playable while disguising worn areas with Field & Fairway's emerald green color. Just pour it into the muddy or wet area, rake and let absorb.

Patterns in Turf

If your are in the market for a mower, consider a reel-type mower. These mowers give your turf a much cleaner cut for stronger, more disease resistant turf, and a better choice for making patterns in the turf.

TIPS FROM THE PROS *Mowing Patterns:*

Mowing patterns should be alternated every time your turf is cut. This promotes strong and level turf surfaces by forcing your grass to grow upward rather than falling in a horizontal position. Patterns are becoming trademarks for groundskeepers and there is no limitation to what you can achieve. Here are a few simple patterns:

OUTFIELD:

1. Up and down parallel to the right field foul line.
2. Up and down parallel to the left field foul line.
3. From second base to center field, back and forth.
4. From foul pole to foul pole, back and forth.
5. Half circles, same contour as the skinned infield outer edges.

INFIELD:

1. Same as #1 above.
2. Same as #2 above.
3. Home plate to second base, back and forth.
4. Third base to first base, back and forth.

David R. Mellor

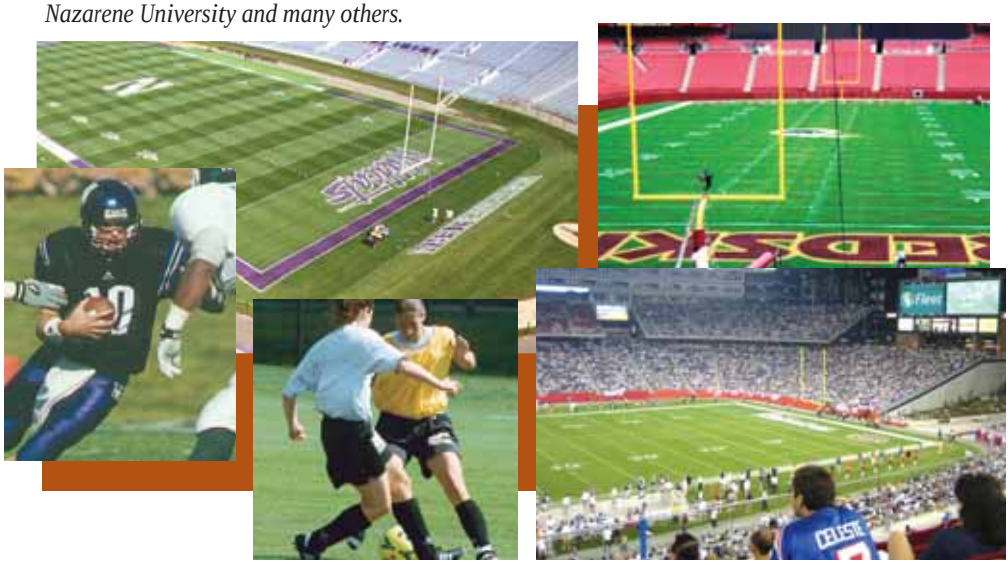
Director of Grounds, Boston Red Sox

Author of : ***Lawn Bible, Picture Perfect***

TURFACE® and PROFILE™ Porous Ceramic lead the sports field industry in soil modification from the Major Leagues and NFL to community fields at the park and recreation level. Our commitment to coaches and groundskeepers is to provide superior sport fields allowing athletes to perform at their maximum ability.

Recent projects include:

Los Angeles Angels of Anaheim Edison Stadium, Carolina Panthers Bank of America Stadium, New England Patriots Gillette Stadium, Washington Redskins FedEx Field, Chicago Bears Soldier Field and Practice Facility, Chicago Cubs Wrigley Field, Northwestern University Football, Purdue University Soccer, University of Evansville Soccer, Virginia Tech Football Practice Facility, Olivet Nazarene University and many others.



PROFILE™ offers products and support for sports field renovation, new construction or maintenance projects resulting in the ultimate playing field for athletes. Call **1-800-207-6457** for more information.

Soil Based Fields: NEW CONSTRUCTION or RENOVATION

TURFACE should be incorporated at a rate of 1 ton per 1,000 sq. ft. to a depth of 4 inches. This quantity results in a 15% TURFACE to soil ratio. This soil mix provides a soil that resists compaction, holds water and nutrients, and dramatically increases drainage creating an environment for healthy athletic turf.

Sand Based Fields: NEW CONSTRUCTION or RENOVATION

High performance root zones are being designed with PROFILE Porous Ceramic. PROFILE is a sand size porous ceramic particle manufactured by the makers of TURFACE. PROFILE is used in sand-based fields to replace peat and other organics. PROFILE increases oxygen and drainage while holding nutrients and moisture for high performance root zones.

Extreme Traffic Areas

Create a compaction-free soil with 2 tons of TURFACE per 1,000 sq. ft. incorporated 4 inches deep. This rate is excellent for soccer goal mouths, between hash marks on football fields and other high traffic areas.

Seed or Sod?

Establish your grass stand by seeding or sprigging, or use sod grown on sand to avoid a clay interface with your newly designed soil mix. The clay or soil layer under the sod may stop water from draining and roots from growing into the PROFILE or TURFACE amended soil. After sodding it is very important to aerify and topdress with PROFILE or TURFACE after the sod has rooted. TURFACE or PROFILE will break up the soil layer that came with the sod.

Ken Mrock's 6 Steps to a Winning Turf Field

(Core Aerification Program for the Spring and Fall)

- TURFACE is not just an outstanding infield soil conditioner. It has been used extensively to modify turf soils, adding permanent water, nutrient, and air holding pore space.
- Many Major League Baseball, NFL, college and high school fields use TURFACE to absorb water and amend soils.
- TURFACE is successfully used in high compaction areas of golf courses, and high traffic landscape areas of hotels and office complexes.
- Use TURFACE during construction, after aerification, or to improve your topdressing blend.

STEP 1: *Core aerify with multiple passes when conditions are proper to achieve maximum depth. Allow plugs to dry. Avoid aerification in high heat (80+ degrees F).*

STEP 2*: Apply Field & Fairway at a rate of 500 lbs. per 1,000 sq. ft. You can use a topdresser, drop or push spreader fully open to evenly apply product.*

STEP 3: *After topdressing, seeding is important to establish a denser stand of turf. Contact a local Turface/Profile distributor for the recommended seed blend needed for your area.*

STEP 4*: Slowly drag the entire turf area with a mat drag to force materials into the turf and aerification holes. Best results occur if plugs are allowed to dry.*

STEP 5*: Fertilize. Contact a local Turface/Profile distributor to test your soil to determine proper types and amounts of fertilizer needed.*

STEP 6*: Water the entire field, but do not soak. Puddling may cause seeds to float, resulting in uneven growth.*

New Construction or Renovation for High-Stress Areas

Rototill TURFACE MVP into the soil at a rate of 1 to 2 tons per 1,000 sq. ft.

Till MVP to a depth of 4".

MVP provides a soil that resists compaction and holds moisture and nutrients for outstanding turf.

Call 1-800-207-6457

www.turface.com

Selecting Infield Conditioners

Lack of funds *are all too common for coaches and groundskeepers and result in decisions to purchase brick dust/vitrified clay, limestone screenings, shale, sand or other products to try and keep a field from becoming unplayable during rain. These products do not condition a field like TURFACE. It's best to renovate with TURFACE or incorporate small amounts of TURFACE over time to condition the field* *(see page 5).*

TURFACE®
SPORTS FIELD PRODUCTS
there is No Substitute

CALCINED CLAY:

TURFACE MVP, *Pro League* and Quick Dry are calcined clay products manufactured specifically to condition sports fields to improve drainage, reduce compaction and absorb excess water. However, tremendous variation exists between TURFACE and other calcined clay products. Many materials are called calcined clay, and many claim to be "just like" TURFACE. However, degradation of calcined clays range from 3.5% over 20 years with TURFACE to calcined clays that degrade or melt back down to clay in a few days. TURFACE is the #1 Choice of Groundskeepers because of its unique raw clay mineral and the manufacturing process, which produces a very stable, uniform particle with consistent color and little dust. TURFACE has been supplying products to the sports field industry for 40 years.

DIATOMACEOUS EARTH:

DE is primarily made of prehistoric diatoms (single celled algae). DE is more brittle and dusty than TURFACE. Claims that the lighter bulk density of DE will allow you to use less product to condition a field as well as TURFACE is simply not accurate – DE will not condition an infield like TURFACE.

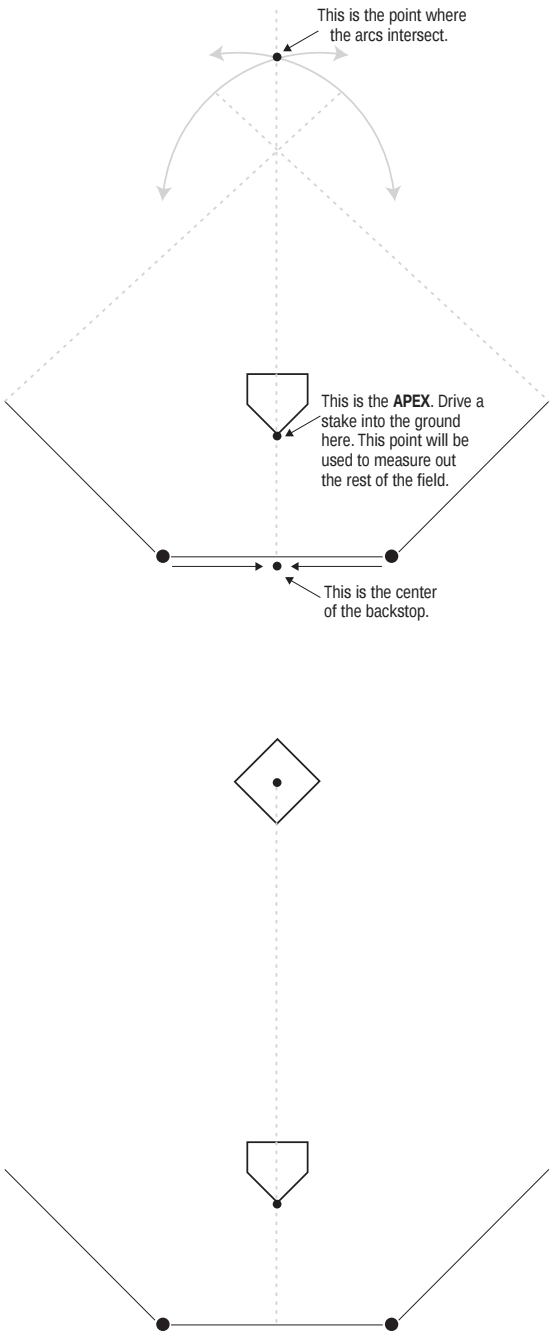
BRICK DUST/VITRIFIED CLAY/CRUSHED AGGREGATES:

There are significant differences between TURFACE Sports Field Conditioners and crushed aggregates that are products of non sports field related industries including the concrete and brick industries. Typically, these crushed aggregates are used as a red infield colorant or as a substitute for a soil conditioner to prevent rain outs. Unfortunately, they do not have the same absorption, drainage and stability characteristics as TURFACE. These materials may appear inexpensive but they typically weigh twice as much as TURFACE thus requiring twice the tons to cover the same area. Aggregate infields should be amended with TURFACE MVP or *Pro League* to help them from becoming compacted and to improve their moisture absorption.

Profile Products LLC
750 Lake Cook Road, Suite 440 • Buffalo Grove, IL 60089
1-800-207-6457 • FAX 1-847-215-0577
www.turface.com

11. Field Layouts

*for **Baseball, Softball, Shetland, Pinto, Mustang, Bronco, Pony** and **Little League***



Field Orientation:
Align the field so that the pitcher is throwing across the sunrise/sunset line.

Step 1: Triangulate The Backstop
If there is no backstop, position the apex of home plate in an appropriate spot. For positioning the apex of home plate using an existing backstop, start from one outside corner of the backstop and run a string or tape measure out to a couple of feet past where you think the pitching rubber will be. Scribe an arc. Repeat this process starting from the second post, making sure the second string or tape is the same length as the first.

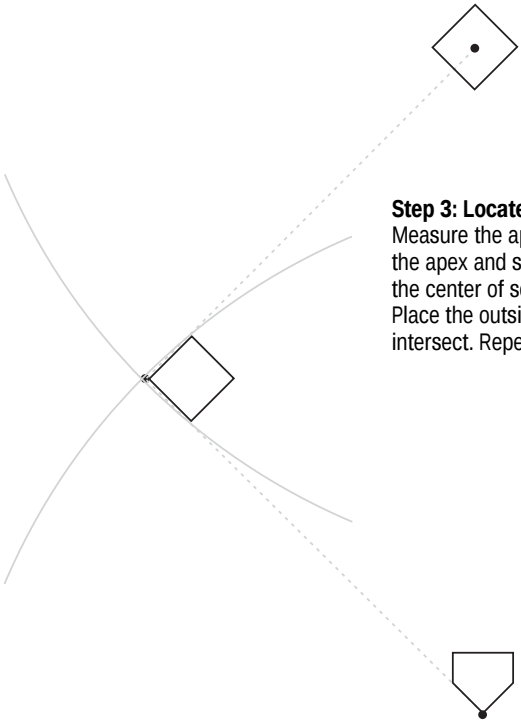
Next, measure and locate the center of the backstop. Extend a straight line from this point out to where the arcs intersect. Position the apex of home plate on this line, and depending on which type of field, a prescribed distance from the backstop.

Recommended distance from backstop to apex:
20' for Shetland and Pinto League (50' Field)
20' for Mustang League (60' Field)
25' for Little League (60' Field)
30' for Bronco League (70' Field)
40' for Pony League (80' Field)
25' for Softball (60' Field)
60' for Baseball (90' Field)

Step 2: Locate Second Base
Run a line from the center point on the backstop, through the apex and over pitcher's mound to place second base on center. The distance to measure is from the apex of home plate to the center of second base.

Distance from apex to center of second base:
70' 8-1/2" for Shetland and Pinto League (50' Field)
84' 10" for Mustang League (60' Field)
84' 10-1/4" for Little League (60' Field)
99' for Bronco League (70' Field)
113' 2" for Pony League (80' Field)
84' 10-1/4" for Softball (70' Field)
127' 3-3/8" for Baseball (90' Field)

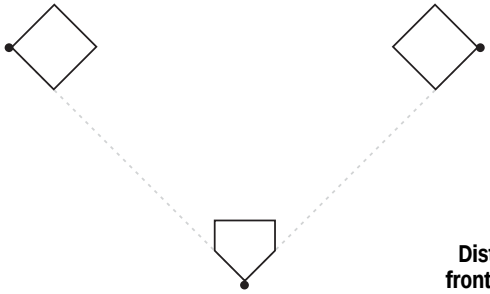
(These measurements are identical to the distance from the outside back corner of third base to the outside back corner of first base.)



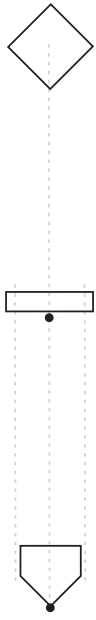
Step 3: Locate First Base and Third Base
Measure the appropriate baseline distance to third base from the apex and scribe an arc. Measure the same distance from the center of second base to third base and scribe another arc. Place the outside back corner of the base where the arcs intersect. Repeat to locate first base.

Distance from apex and second base to first or third base
50' for Shetland and Pinto League (50' Field)
60' for Mustang League (60' Field)
60' for Little League (60' Field)
70' for Bronco League (70' Field)
80' for Pony League (80' Field)
60' for Softball (60' Field)
90' for Baseball (90' Field)

Step 4: Set Home Plate
Draw a line from the outside back corner of third base to the apex and from the outside back corner of first base to the apex. Align the back angles of home plate to match up with these lines.

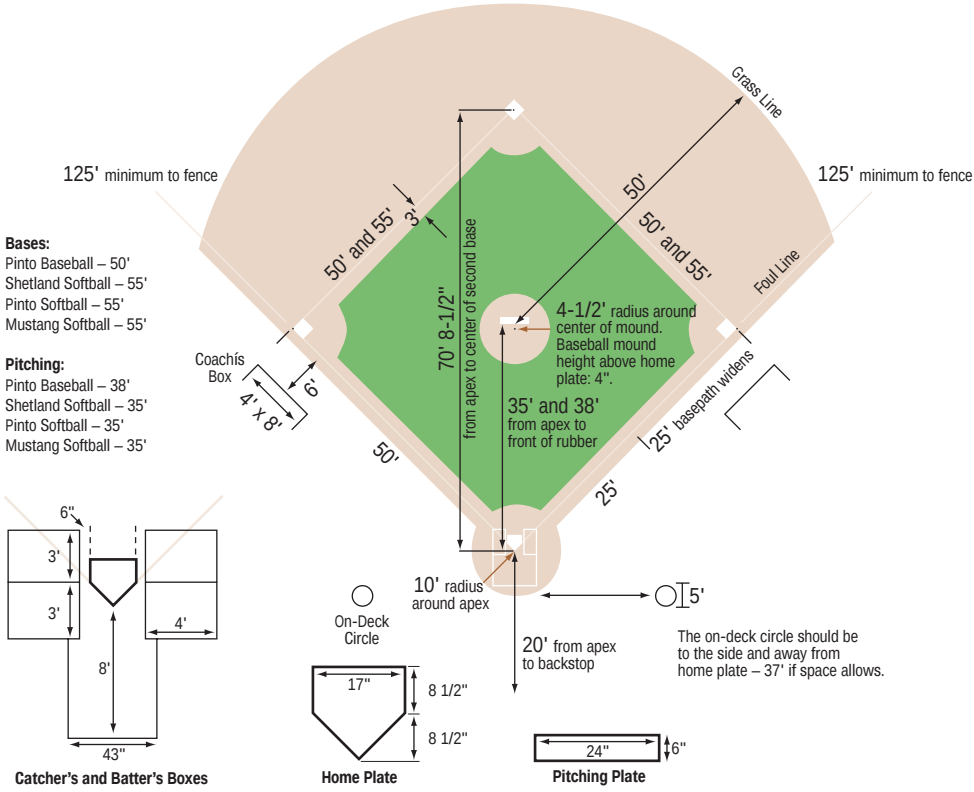


Distance from apex to front of pitching rubber:
35' for Shetland-Pinto-Mustang Softball (50' Field)
38' for Pinto Baseball (50' Field)
40' for Bronco Slow-Pitch Softball (60' Field)
44' for Mustang Baseball (60' Field)
46' for Pony-Colt-Palomino Fast-Pitch Softball (60' Field)
46' for Little League (60' Field)
48' for Bronco League (70' Field)
54' for Pony League (80' Field)
46' for Softball (60' Field)
60' 6" for Baseball (90' Field)



Step 5:
Set Pitching Rubber
Following the straight line from the apex to the center of second base, measure a line from the apex to the spot where the front of the pitching rubber will be. Square up the pitching rubber by measuring an equal distance from the front corners of home plate to the corresponding corners on the pitching rubber.

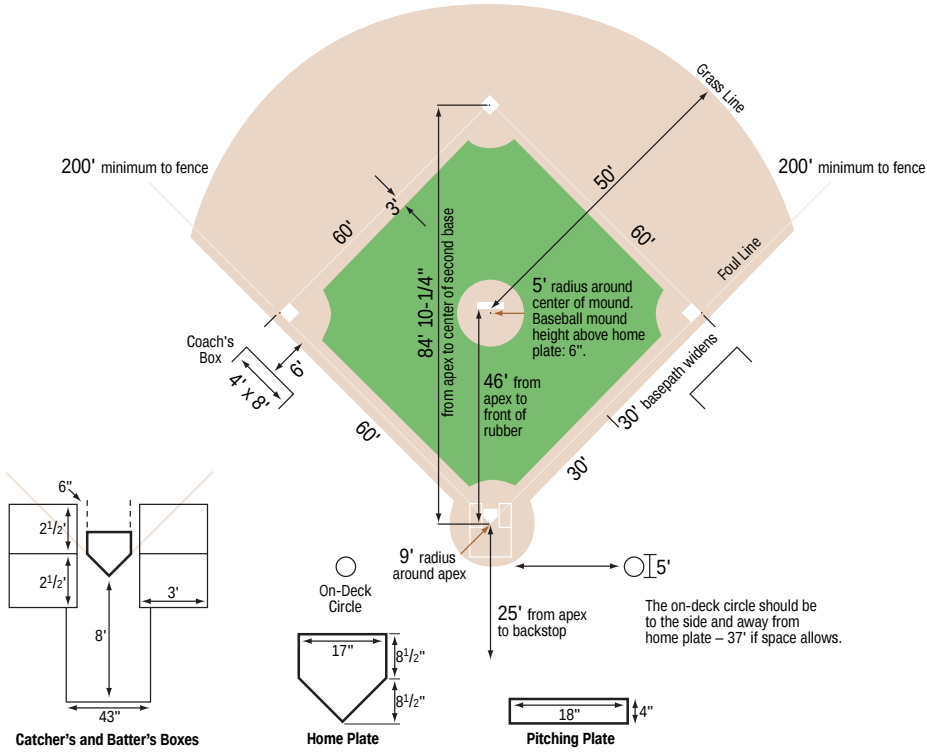
50' Shetland and Pinto League Field



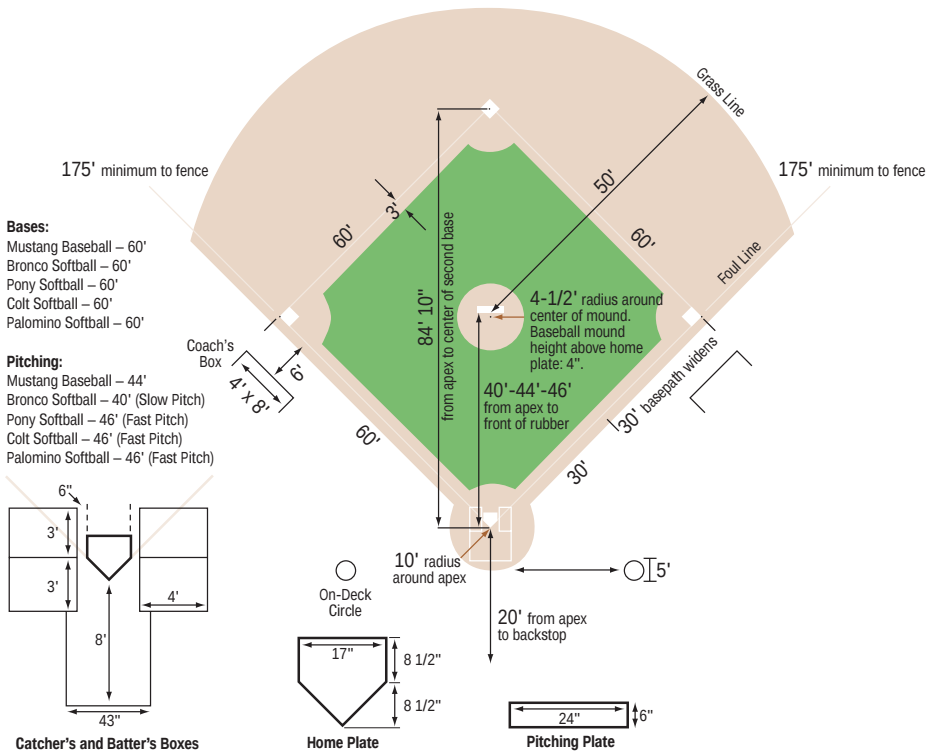
Bases:
Pinto Baseball – 50'
Shetland Softball – 55'
Pinto Softball – 55'
Mustang Softball – 55'

Pitching:
Pinto Baseball – 38'
Shetland Softball – 35'
Pinto Softball – 35'
Mustang Softball – 35'

60' Little League Field



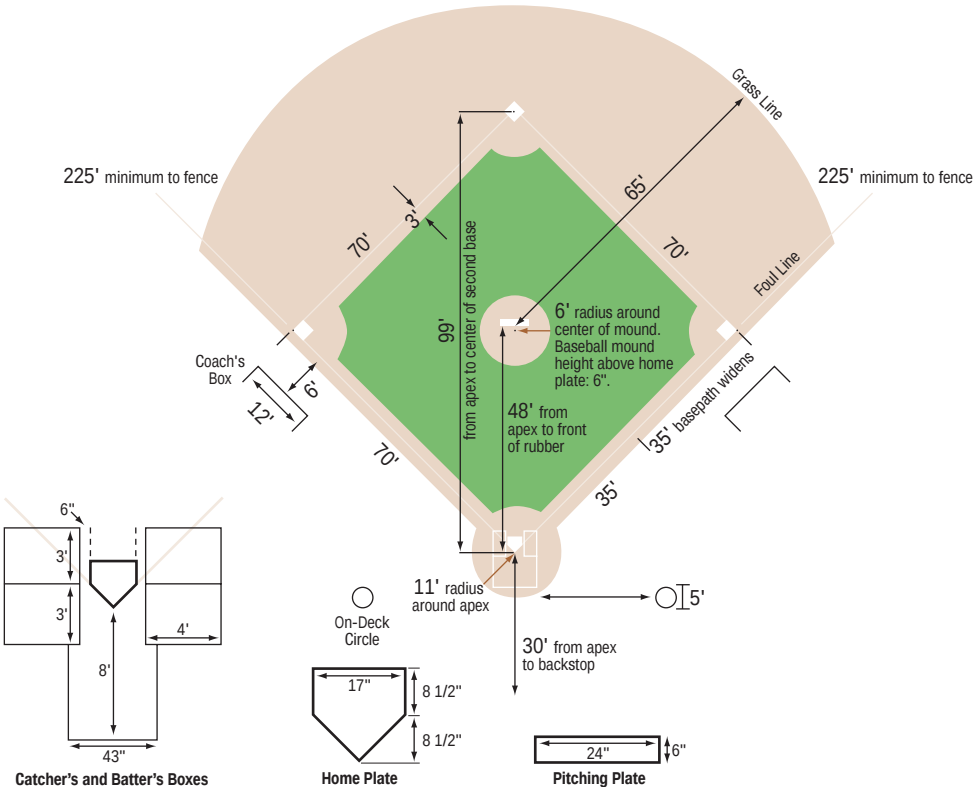
60' Mustang League Field



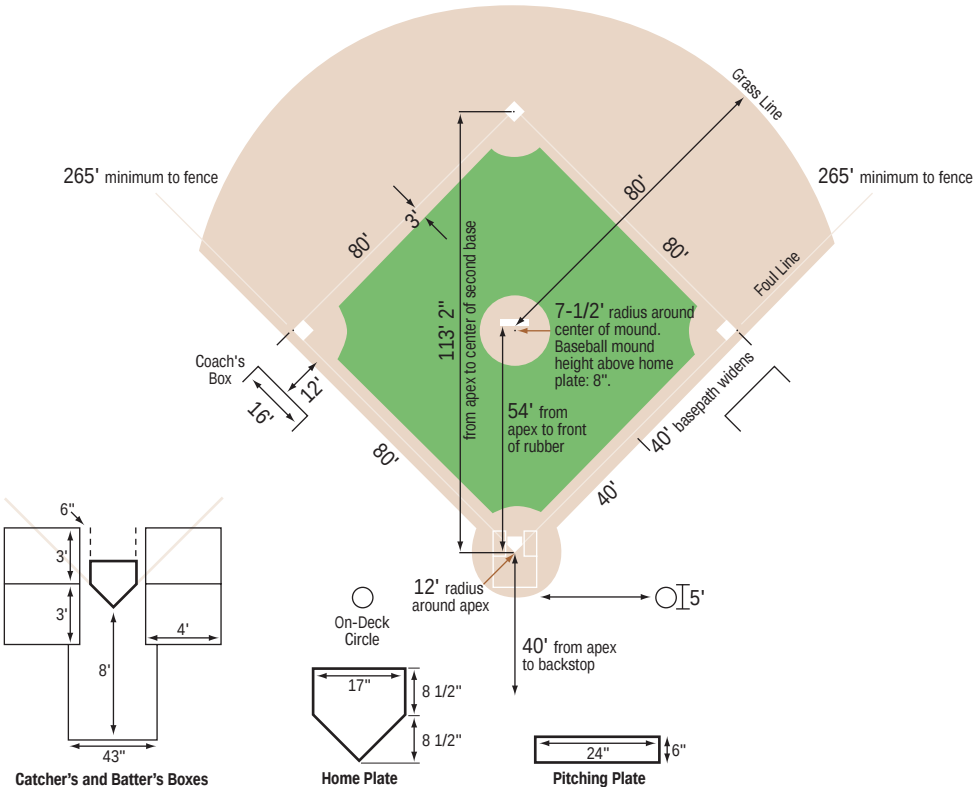
Bases:
Mustang Baseball – 60'
Bronco Softball – 60'
Pony Softball – 60'
Colt Softball – 60'
Palomino Softball – 60'

Pitching:
Mustang Baseball – 44'
Bronco Softball – 40' (Slow Pitch)
Pony Softball – 46' (Fast Pitch)
Colt Softball – 46' (Fast Pitch)
Palomino Softball – 46' (Fast Pitch)

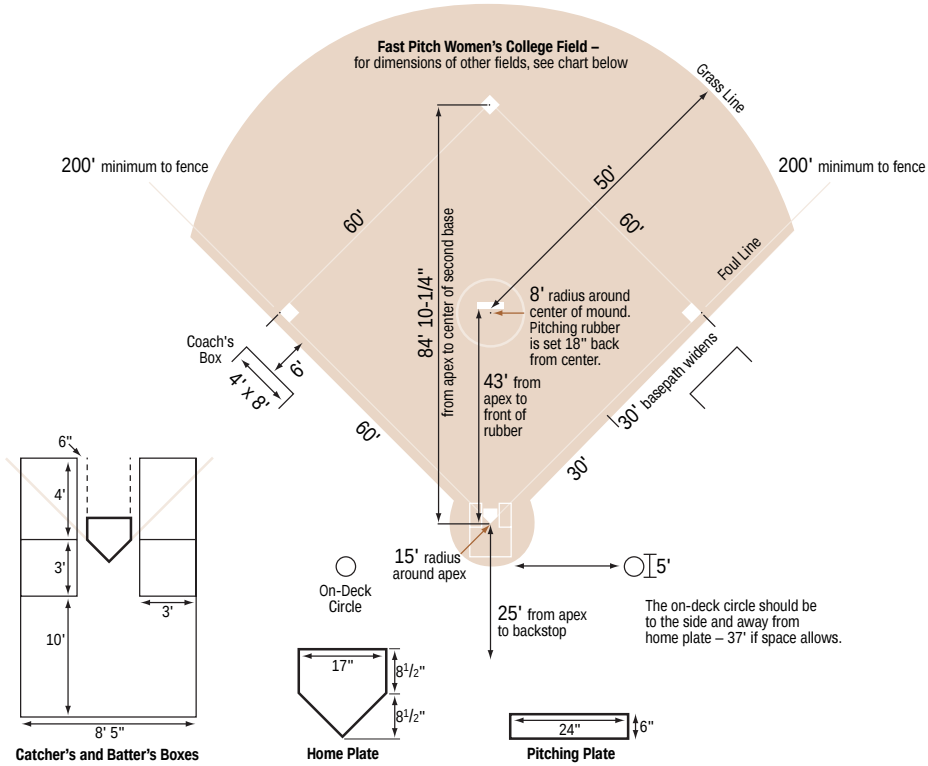
70' Bronco League Field



80' Pony League Field



60' Softball Field

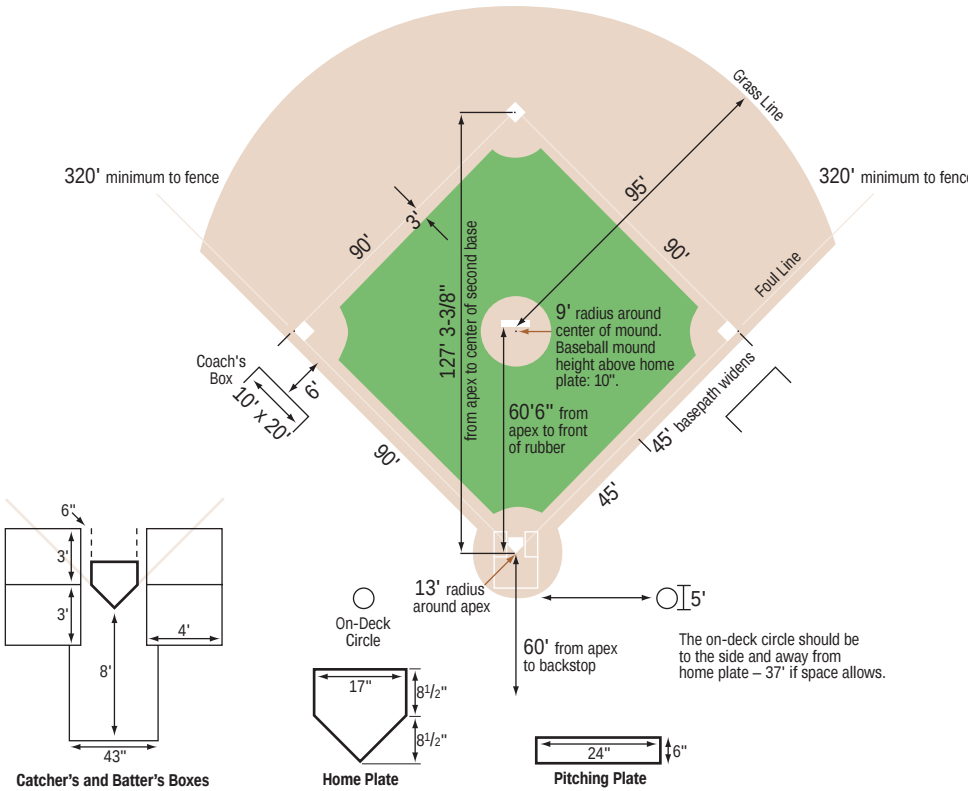


Distance Table

Adult	Division	Bases	Pitching	Min. Fence	Max. Fence
Fast Pitch	Women (High School)	60' (18.29m)	40' (12.19m)	200' (60.96m)	250' (76.20m)
	Women (College)	60' (18.29m)	43' (13.11m)	200' (60.96m)	250' (76.20m)
	Men	60' (18.29m)	46' (14.02m)	225' (68.58m)	250' (76.20m)
Modified Pitch	Women	60' (18.29m)	40' (12.19m)	200' (60.96m)	
	Men	60' (18.29m)	46' (14.02m)	265' (80.80m)	
Slow Pitch	Women	65' (19.81m)	50' (15.24m)	265' (80.80m)	275' (83.82m)
	Men	65' (19.81m)	50' (15.24m)	275' (83.82m)	315' (96.01m)
	Coed	65' (19.81m)	50' (15.24m)	275' (83.82m)	300' (91.44m)
	Super	65' (19.81m)	50' (15.24m)	325' (99.06m)	
16-Inch Slow Pitch	Women	55' (16.76m)	38' (11.58m)	200' (60.96m)	
	Men	55' (16.76m)	38' (11.58m)	250' (76.20m)	
14-Inch Slow Pitch	Women and Men	60' (18.29m)	46' (14.02m)		

Youth	Division	Bases	Pitching	Min. Fence	Max. Fence
Slow Pitch	Girls & Boys 10-under	55' (16.76m)	35' (10.76m)	150' (45.72m)	175' (53.34m)
	Girls & Boys 12-under	60' (16.76m)	40' (12.19m)	175' (53.34m)	200' (60.96m)
	Girls 14-under	65' (19.81m)	46' (14.02m)	225' (68.58m)	250' (76.20m)
	Boys 14-under	65' (19.81m)	46' (14.02m)	250' (76.20m)	275' (83.82m)
	Girls 16-under	65' (19.81m)	50' (15.24m)	225' (68.58m)	250' (76.20m)
	Boys 16-under	65' (19.81m)	50' (15.24m)	275' (83.82m)	300' (91.44m)
	Girls 18-under	65' (19.81m)	50' (15.24m)	225' (68.58m)	250' (76.20m)
	Boys 18-under	65' (19.81m)	50' (15.24m)	275' (83.82m)	300' (91.44m)
Fast Pitch	Girls & Boys 10-under	55' (16.76m)	35' (10.76m)	150' (45.72m)	175' (53.34m)
	Girls 12-under	60' (18.29m)	35' (10.76m)	175' (53.34m)	200' (60.96m)
	Boys 12-under	60' (18.29m)	40' (12.19m)	175' (53.34m)	200' (60.96m)
	Girls 14-under	60' (18.29m)	40' (12.19m)	175' (53.34m)	200' (60.96m)
	Boys 14-under	60' (18.29m)	46' (14.02m)	175' (53.34m)	200' (60.96m)
	Girls 16-under	60' (18.29m)	40' (12.19m)	200' (60.96m)	225' (68.58m)
	Boys 16-under	60' (18.29m)	46' (14.02m)	200' (60.96m)	225' (68.58m)
	Girls 18-under	60' (18.29m)	40' (12.19m)	200' (60.96m)	225' (68.58m)
	Boys 18-under	60' (18.29m)	46' (14.02m)	200' (60.96m)	225' (68.58m)

90' Baseball Field



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KEEPS AMERICA PLAYING