

# The Complete Guide to Kickology

3<sup>rd</sup> edition

by Mike Herman and Guests  
exclusive to [Footballguys](#)

*Sneak  
Preview  
Chapter*

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#### Featuring interview material from the following NFL kickers

- Connor Barth
- Mason Crosby
- Jay Feely
- Robbie Gould
- Ryan Longwell
- Jeff Reed

# 26. Grass vs. Synthetic Turfs



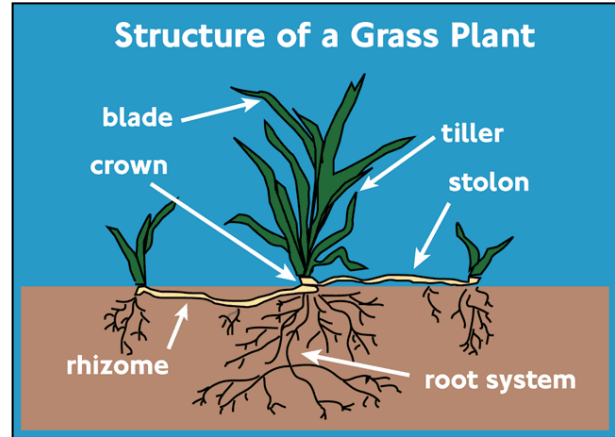
“When two elephants fight, it is the grass that gets trampled” - African proverb

## SURFACE TYPES

### Grass

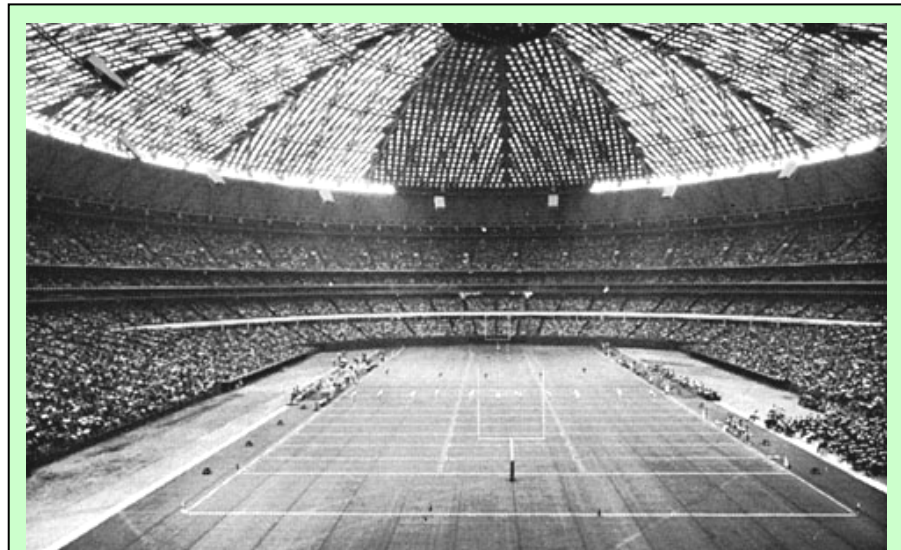
Grass is the stuff that grows naturally and has been around for a long, long time. For purists, it is real (not manmade). It is typically cooler, softer, and more forgiving than the artificial surfaces, which supports the general belief that it “causes” fewer injuries. It is generally more sustainable (environmentally friendly) than the fake stuff, however it does need water, which can be an issue in dry climates. It needs sunlight, which means it cannot grow indoors. It typically requires more maintenance than artificial surfaces. It also does not hold up as well under heavy use or some types of adverse weather.

Grass belongs to the Gramineae plant family, which includes most plants grown as grains, and for lawns and playing surfaces (turf). Commonly used grass types for football fields include Kentucky Bluegrass, Perennial Ryegrass, Tall Fescue, and Bermudagrass, depending on the climate zone in which the field is located. See the following links for additional information on [how grass works](#) and on [athletic field turf grasses](#).



### Astroturf

The old generation of synthetic turf, Astroturf was one of the brand names; however the term became generically utilized when referring to artificial turf. It was invented by two employees of Monsanto in 1964, and was initially called ChemTurf. The product has since changed owners countless times. In essence, it was a carpet, typically installed over concrete. While it made indoor stadiums a viable venue, its abrasive and unforgiving nature became an issue. Consequently its use declined and the newer artificial turf technologies took hold. In the NFL, Indianapolis and St. Louis were the last to still use Astroturf. They both finally switched over to FieldTurf for the 2005 season.



**The Astrodome (the Eighth Wonder of the World)**

The first dome stadium opened in 1965 and featured a newly developed artificial surface, which would hence also use the Astro name.

### Fieldturf

The new generation of synthetic turf, FieldTurf is one of the brand names; however it has already become a generically used term. The product more closely simulates grass, as opposed to carpeting. The synthetic “grass blades” are typically made of polyethylene. The synthetic “earth” is made of sand and ground up rubber ([FieldTurf](#) and [Momentum Turf](#)), or just the rubber bits ([Astroplay](#) and [RealGrass](#)).

## Fibre

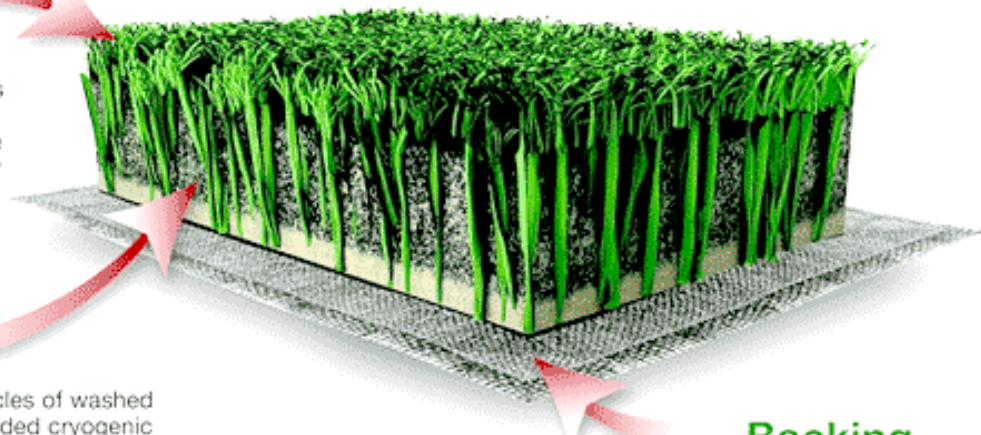
Polyethylene fibre is treated with UV inhibitors and is abrasion resistant so that athletes can slide on the fibres without fear of turf burns.

## Infill

Similarly sized particles of washed silica sand and rounded cryogenic rubber infill hold each other in suspension, compress and expand to provide stability, long life resiliency and proper energy restitution.

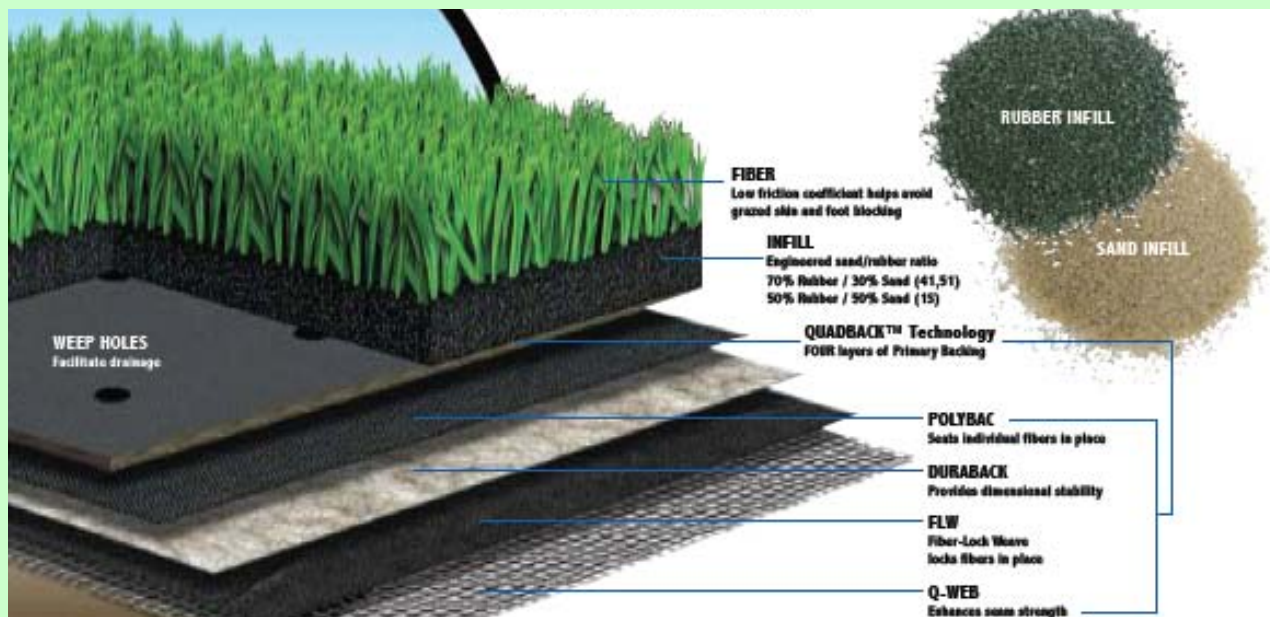
## Backing

The backing is made of a combination of permeable woven and non-woven polypropylene fabrics to provide exceptional strength and unmatched vertical drainage.



In their product literature, [FieldTurf](#) describes their system as follows:

“Stable, firm not spongy, non-abrasive and uniform in traction, FieldTurf is engineered to play and feel like natural grass. On FieldTurf, players perform with confidence - and never experience the accelerated fatigue and muscle / joint stress associated with lightweight, rubber- filled systems. Like blades of natural grass, FieldTurf’s fibers are soft and easy to slide on. They are surrounded and stabilized by FieldTurf’s patented, heavy fill - the «artificial earth» that so clearly sets FieldTurf apart. Composed of smooth, rounded silica sand and cryogenically frozen and smashed rubber particles, FieldTurf’s patented infill is engineered to stay «in suspension» providing years of proper biomechanics, shock absorbency and durability. A patented process of precision layering ensures infill uniformity. The result is a stable, resilient, predictable place to play - grass-like performance of the highest quality.”



In their product literature, [Sportexe](#) describes their [Momentum Turf](#) system as follows:

“Sand / Rubber infill creates a fast, dense, firm surface . Exclusive Strenexe fiber is more durable and less abrasive than previous slit-film fibers. Low G-Max means Momentum is safe, yet firm. High Fiber Density helps make Momentum a lush, long-lasting surface. Equal Fiber Matrix provides stability and consistency. QuadbackT provides durability and improved tuft bind. Seams sewn edge-to-edge to eliminate bumps.”

## 2008 NFLPA Field Surface Rankings

The [National Football League Players Association](#) bi-annually ranks the field surfaces of all the NFL stadiums. The following 2008 results are based on the votes from 1565 active NFL players from all 32 teams. The top four spots were all grass fields, although the artificial surfaces made a strong showing thereafter with seven of the next eight slots.

- |                             |   |                            |
|-----------------------------|---|----------------------------|
| 1. Arizona                  | 12. New England (FieldTurf)             | 22. Cincinnati (FieldTurf) |
| 2. Tampa Bay                | 13. Denver                              | 23. Kansas City            |
| 3. San Diego                | 14. Green Bay                           | 24. Minnesota (FieldTurf)  |
| 4. Carolina                 | 15. Washington                          | 25. Cleveland              |
| 5. Indianapolis (FieldTurf) | 16. St. Louis (FieldTurf)               | 26. Philadelphia           |
| 6. Seattle (FieldTurf)      | 17. Miami                               | 27. Buffalo (Astroplay)    |
| 7. Baltimore (Momentum)     | 18. Houston                             | 28. Chicago                |
| 8. Jacksonville             | 19. New York Giants/Jets<br>(FieldTurf) | 29. Dallas (RealGrass)     |
| 9. Atlanta (FieldTurf)      | 20. Tennessee                           | 30. Pittsburgh             |
| 10. Detroit (FieldTurf)     | 21. San Francisco                       | 31. Oakland                |

### University of Phoenix Stadium

NFL players voted the Arizona Cardinals' home field as the best playing surface in the league. The stadium features a retractable roof and the first ever retractable field. The grass field sits in a single massive tray which typically resides outside the stadium. The tray is rolled into the stadium for games.

View a video of the retractable field system [here](#).



**We asked NFL kickers to discuss any differences between kicking on grass versus artificial surfaces. Following are their answers:**

### Connor Barth

"To my surprise, when I kicked in the ACC in North Carolina, for the most part all the fields in the ACC were pretty nice. Only one field I think, Wake Forest, was FieldTurf when I played in college. Mostly I kicked all on grass surfaces. And I love kicking off grass, because in North Carolina and South Carolina the ground has a lot of time to grow, they're just a lot of fun, and the weather is usually pretty mild. Now that I kick in the NFL, the stadiums are only nice for about the first three games or four games. Then they start getting torn up because of the weather and stuff. I love kicking off FieldTurf now. I wish that Kansas City would go to it just because it's a flat surface; there are no bumps. It doesn't matter how much you play on it, it always stays the same. The big adjustment with the grass in the NFL now is... I don't know what it is, perhaps there's more play on it, I guess maybe because the hashes are closer together in the NFL, it gets torn up more. It's a lot harder to find good spots on the NFL fields I feel. Kicking on FieldTurf, like when I got to kick in Cincinnati and places like that, it was so easy because every spot on the field was nice. It was all flat and there were no disruptions from when people were running around on it. I'm a grass guy, I like kicking off grass because I feel more comfortable. But now that I've kicked on more and more FieldTurf fields now that I've been in the NFL, I'm kind of leaning towards the FieldTurf just because it's more of a flat surface and you never have the bumps and divots that you get in grass fields."

### Ryan Longwell

“Kicking in the Metrodome, not having to worry about your foot sticking in the ground is a big advantage.”

### Jay Feely

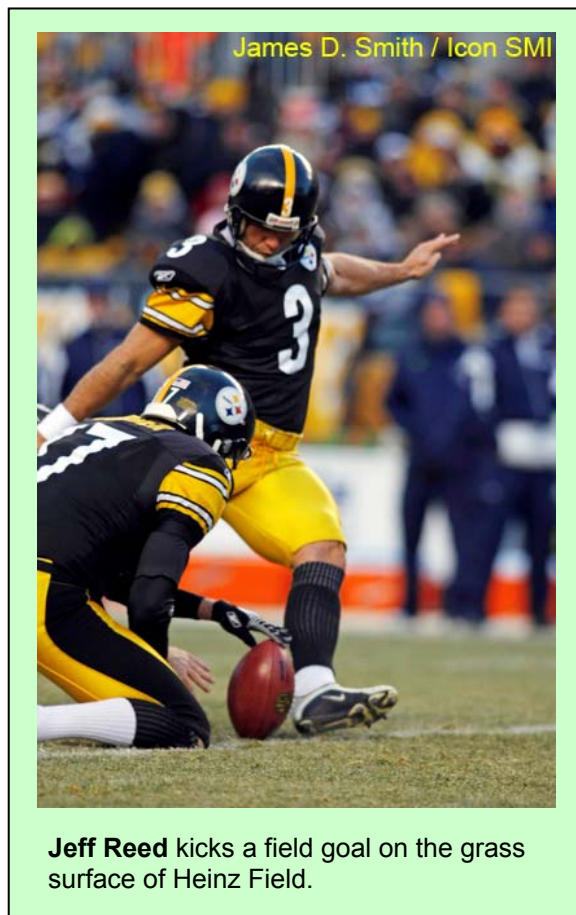
“It’s [FieldTurf] helpful because you get better footing, you get consistent footing. On a grass field, even if it’s a real nice grass field, you may hit a loose spot and lose your footing, and that makes it tough to kick and be consistent. Probably the easiest stuff to kick off of is the old AstroTurf that nobody has anymore. Sometimes FieldTurf gets thick and you kind of chunk it, like you would hit a golf shot thick.”

### Mason Crosby

“The only difference is in the plant shoe. I wear longer cleats in grass and shorter on turf. Other than that, I do not make big adjustments.”

### Jeff Reed

“It depends on the kind of grass and the field you are playing on. It is easier on your body, whether you are a player or a kicker, when you play on grass. At times, when you get mud or sand, you have to adjust your steps because I attack the ball so I don’t want to slip. Field turf is nice because you can always attack the ball whether there is rain or snow. Sometimes, when it snows, if the field turf isn’t heated, there is snow on top of the field, so it is interesting, to say the least. I have had some crummy games dealing with that. Overall, as a kicker, I want grass. If the grass is slick, or it doesn’t hold over an entire season, artificial turf is better for me because I can trust it more.”



## KICKING RESULTS ON VARIOUS SURFACES

The big question of course, is how do the various surfaces affect the kicking game?

Stadium	FG Total			FG 1-19		FG 20-29		FG 30-39		FG 40-49		FG 50+		XPm	XPa	POINTS	
	md	att	avg	md	att	md	att	md	att	md	att	md	att			Total	ppg
Astroplay visitors	65	84	77.4%	0	0	22	23	21	26	19	27	3	8	97	97	292	5.7
Astroplay home	80	104	76.9%	0	0	35	39	28	30	13	27	4	8	110	110	350	6.9
Astroplay total	145	188	77.1%	0	0	57	62	49	56	32	54	7	16	207	207	642	6.3
Astroturf Visitors	258	309	83.5%	3	3	75	78	84	93	75	96	21	39	365	367	1139	6.9
Astroturf home	266	331	80.4%	2	2	96	99	74	85	74	111	20	34	412	417	1210	7.4
Astroturf total	524	640	81.9%	5	5	171	177	158	178	149	207	41	73	777	784	2349	7.2
FieldTurf visitors	630	769	81.9%	7	7	214	224	181	210	179	244	49	82	914	918	2804	6.7
FieldTurf home	682	797	85.6%	10	10	220	225	231	263	176	221	45	77	1018	1028	3064	7.3
FieldTurf total	1312	1566	83.8%	17	17	434	449	412	473	355	465	94	159	1932	1946	5868	7.0
Grass visitors	1550	1957	79.2%	26	26	536	558	480	578	414	617	94	177	2178	2208	6828	6.2
Grass home	1666	2104	79.2%	22	24	561	588	533	630	456	665	94	196	2621	2659	7619	6.9
Grass total	3216	4061	79.2%	48	50	1097	1146	1013	1208	870	1282	188	373	4799	4867	14447	6.6
grass (heated) visitors	224	289	77.5%	2	2	67	74	85	95	61	98	9	20	316	322	988	6.5
grass (heated) home	207	272	76.1%	8	8	71	75	70	94	50	78	8	17	282	290	903	5.9
grass (heated) total	431	561	76.8%	10	10	138	149	155	189	111	176	17	37	598	612	1891	6.2
Momentum Turf visitors	128	148	86.5%	3	3	45	47	41	43	27	36	11	18	150	150	534	6.8
Momentum Turf Home	144	166	86.7%	4	4	48	49	51	53	35	48	6	12	198	199	630	8.0
Momentum Turf total	272	314	86.6%	7	7	93	96	92	96	62	84	17	30	348	349	1164	7.4
RealGrass visitors	92	111	82.9%	1	1	26	28	29	30	29	38	7	14	119	122	395	6.7
RealGrass home	81	104	77.9%	2	2	28	28	22	27	23	35	6	10	153	154	396	6.7
RealGrass total	173	215	80.5%	3	3	54	56	51	57	52	73	13	24	272	276	791	6.7

### Surface Notes and Observations

- The field goal percentage numbers are typically better on artificial surfaces than they are on grass.
- FieldTurf and Momentum Turf are the only two surfaces where the home kickers' field goal percentage is better than the opponents' kickers.
- The numbers for Astroplay, RealGrass, and Momentum Turf are limited since they are only used in one or two stadiums each.