ADVANCES IN HYBRID TURF SYSTEMS

2016 Technical Meeting
2-6 December
Amelia Island, FL
ADVANCES IN HYBRID TURF SYSTEMS

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HYBRID TURF

- “Hybrid turf” is a relatively new term in the industry.

- Broadly, refers to a combination of natural grass and synthetic elements.
In this regard, the playing surface is a hybrid -

“a thing made by combining two different elements”

- natural grass and synthetic fibers.
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- Older or more traditional terms for these combinations include “reinforced grass” or “stabilized grass.”

- Today the term more specifically refers to systems where the synthetic fibers extend into the natural grass canopy.
THREE GENERAL CATEGORIES:

1. Reinforced Turf
2. Stabilized Turf
3. Hybrid Turf

Let's look at a few examples of each
REINFORCED TURF

- Synthetic fibers are mixed with the root zone material (off site or in situ)
- The fibers stabilize the soil and help secure the grass roots in the growing medium
- Examples: Fibresand/Loksand (UK), StaLok (US), Airfibr (France)
REINFORCED TURF

Fibresand/Loksand (UK)

- Fine synthetic fibers
- Pre-mixed with root zone sand and spread +/- 1.5” depth
- On the sod farm, a thin sand layer may be spread below the imported root zone to assist in harvest
- Finished product is produced from seed or washed sod
REINFORCED TURF

Airfibr (France)

- Cork granules, synthetic microfibers, fine silica sand
STABILIZED TURF

- Synthetic mat, infilled with sand to the tops of the fibers
- Plant’s crown grows protected within the mat, roots entwine around the fibers and pass through the open backing
- Fibers do not extend into the canopy – 100% natural grass surface
- Example: Eclipse
STABILIZED TURF

- Mat with upright fibers and biodegradable backing
- Fibers are 1.0” – 1.5” high; infilled with sand
- Produced on the farm over perforated plastic and a root-pruning fabric
STABILIZED TURF

- Root growth through the backing
- Sod thickness consistent throughout
- Immediate playability, easy replacement/rotation
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- Upright synthetic fibers extend above the growing medium
- Fibers reside within the grass canopy
- Categories of hybrid turf:
  1. Permanent Systems
  2. Mat Systems
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Permanent Systems

- Stabilizing fibers are injected into the root zone and extend above the soil line

- Systems are considered “permanent” because once installed the surface cannot be rotated/replaced during the season

- Examples: GrassMaster, SISGrass
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Permanent Systems

GrassMaster

- 6-ended monofilament fibers injected into the root zone

- 3/4” x 3/4” spacing, 6”-7” deep, 3/4”-1” of exposed fiber
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Permanent Systems

SISGrass

- Similar to GrassMaster – monofilament fibers stitched into the root zone
- Machine allows for adjustable spacing
Newly Injected SISGrass Pitch

GrassMaster Surface Stripped of Vegetation
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Mat Systems

- Similar to stabilized turf
- Mats are knitted, woven or tufted
- Grass grows within this synthetic matrix
- Synthetic fibers extend into the grass canopy
- The horizontal mat allows for removal/replacement
- Fibers give visual appearance of density
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Mat Systems

- Examples:
  1. Hero Hybrid Turf
  2. Xtragrass
  3. XtremeGrass
  4. Eclipse LP
  5. Mixto
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Mat Systems

Hero Hybrid Turf - HG Sports Turf

- Unique knitting process creates an open net-like backing
- Upright fibers and weft fibers are locked into the warp braids
- A secondary degradable or removable backing is affixed to the primary to allow for infilling
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Mat Systems

Xtragrass - Greenfields

- Fibers integral with the woven backing; partially degradable
- Dense canopy (high face weight); similar to infilled synthetic turf
- Sometimes referred to as synthetic turf with natural grass; as grass declines surface resembles a sand-filled synthetic turf; desirable in some applications.
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Mat Systems

XtremeGrass – ACT Global

- Fibers integral with the woven backing
- Non-degradable
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Mat Systems

Eclipse LP – The Motz Corporation

- Dual primary backings, polypropylene and jute, tufted fibers
- Biodegradable secondary keeps fibers locked into primary during infilling
- Secondary and jute backings degrade to open the matrix for root growth
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Mat Systems

Mixto – Limonta Sports

- Single woven primary, tufted fibers
- Latex coating to hold fibers in place during infilling
- Open backing can pose challenges during infilling due to sand filtering
MAINTENANCE AND RENOVATION

- Maintained similar to grass fields; most allow for solid tine aeration, verticutting, dethatching, spring tine raking, etc

- Frequency of sand topdressing may be limited so fibers are not buried

- Worn areas easier to replace with mat systems; permanent systems may require a thick-cut sod overlay
MAINTENANCE AND RENOVATION

- Year-end renovation may include thinning of the grass canopy to complete surface removal – fraise mowing

- This practice is routine in Europe and often done using a Koro with the Universe Rotor
When completed, a fraise mown surface is devoid of organic material.
MAINTENANCE AND RENOVATION

- Permanent systems are more conducive to this practice than mat systems because the fibers are driven into the root zone and resist tear-out.

- Mat systems can also be fully renovated, but because they are shallow, the practice requires different means and methods.
Newly Injected SISGrass Pitch

GrassMaster Surface Stripped of Vegetation
IN CLOSING
THANK YOU