



Diluting Course's Drought Challenges

Profile™ Porous Ceramic minimizes course damage during longest drought on record



Situation

Hawthorn Woods Country Club is an Arnold Palmer Signature Golf Course community developed by luxury builder, Toll Brothers. Its golf course operations are managed by Kemper Sport Management. The development opened in 2004 and is located in Lake County, Illinois.

Superintendent Dave Schingel helped construct the 7,100-yard championship golf course that incorporates bentgrass fairways, native fescue greens and enhanced wetlands. A 20-year-plus golf construction veteran, Schingel introduced himself to the Illinois

golf profession in 1998 and helped build the Canyata Golf Club in 2002 with his assistant, Alfonso Nava. Located in Marshall, Illinois, the Canyata Golf Club was ranked by Golf Digest in 2005 as the second best new, private golf course in the United States.

Schingel brought his expertise to Hawthorn Woods in 2004. Schingel worked with Ryan Incorporated Central, a multi-faceted construction company based in Janesville, Wisconsin, to break ground for Hawthorn Woods' golf course in May of that year.

Problem

A unique feature of Hawthorn Woods' golf course is its irrigation system, which is designed to utilize the city of Hawthorn Woods' effluent water. The effluent water will begin pumping onto the course in May 2007 and will pump approximately 3,000 gallons a minute, making it the largest irrigation system in the Midwest. To manage this tremendous volume of water, Hawthorn Woods' irrigation system contains approximately 3,200 golf heads and 1,500 perimeter heads to irrigate 210 acres of turf.

Schingel knew when he began the course's construction that he would have to plan for the best utilization of the city's large amount of effluent water without saturating the greens and encouraging algae build-up.

Solution

Schingel turned to PROFILE Products LLC for options to handle the extreme amount of water he would be using on Hawthorn Woods' course. Schingel worked with the Profile team, which consisted of agronomist Paul Salmon, Dwight Johnson, regional sales manager and erosion control specialist, and Sam Stimmel, director of ProfileGolf™. Together, they concluded that an 80 percent sand,



Over 90,000 tons of Profile™ Porous Ceramic-mixed topsoil was created from stockpiled native soil for fairway capping.



Key Product Properties

Profile™ Porous Ceramic

Profile Porous Ceramic allows you to improve sand root zones by adding pore space, moisture retention and nutrient holding capacity while increasing soil oxygen and drainage. Over the life of golf greens constructed with PPC, PPC provides substantial benefits that include:

- Accelerated grow-in.
- Reduced water usage (up to 20%).
- Reduced fertilizer usage (up to 25%).
- Reduced core aerification (up to 50%).
- Reduced chemical treatments for disease.

20 percent PPC mix would be ideal for the health and longevity of Schingel's course.

PPC is an inorganic soil amendment that dramatically improves drainage and moisture retention of sand-based root zones by balancing air and water pore space. Used on thousands of greens around the world, PPC has been proven to increase soil oxygen, resist compaction, eliminate localized dry spots and facilitate healthy root systems that leave turf less prone to disease. As part of a new greens mix or used in a topdressing program, PPC has proven to be more effective than peat or other inorganic amendments at increasing air and water pore space and enhancing nutrient uptake without breaking down.

With an eye on addressing his future irrigation needs, Schingel still had to contend with a major water shortage in 2005 that put the course's construction in peril. At the time, Chicago was in the midst of a sustained drought that was reported to be one of the longest droughts in 50 years. After 10 consecutive months, the annual shortfall for the region was 12.18 inches.

"It was difficult keeping the greens wet during the drought," Schingel said. "The greens perked at 50 inches an hour, which is extremely fast. You really couldn't overwater during this time."

Despite the drought and the course irrigation's high infiltration rate,

Schingel said he did not have to hand-water any of the greens. Schingel credited this factor to the use of PPC that balanced the soil's moisture levels and allowed for proper drainage. Schingel said the PPC's ability to balance air and water pore space would remain a critical benefit when he would begin utilizing the city's effluent water.

"The challenge Dave faced in watering his greens was one of the more extreme cases I've seen in constructing a golf course," said Stimmel. "But we were confident the PPC would help overcome this challenge and provide an effective way to establish healthy greens."

In addition to using PPC in the course's construction, Schingel also used Profile's netted Futerra® Revegetation Blankets for areas around recently seeded greens. Schingel had achieved superior erosion control with Futerra in the construction of the Canyata Golf Course and sought the same success at Hawthorn Woods. Since Schingel's initial application of Futerra netted blankets at Hawthorn Woods, Profile developed a netless version, Futerra® F4 Netless®, which contains no netting or threads to entangle wildlife and maintenance equipment. Schingel used Futerra on all the approaches where the fairway met the greens and around the bunkers, which had been seeded with fescue grass. Schingel placed Futerra on top of the fescue-seeded

areas to prevent the fescue from washing out and contaminating the bunkers.

Result

Hawthorn Woods' golf course opened May 5, 2006 and today is one of the Chicago area's premier courses known for its striking landscapes and lush greenery. Schingel reported that these features have occurred despite the absence of a sustained aeration program—courtesy of Profile's PPC and Schingel's consistent topdressing regimen.

"I haven't aerated a green yet," said Schingel. "As long as I keep up on my topdressing program and don't encounter thatch problems, I can evaluate the need for an aerification program on a yearly basis."

Schingel said he's been pleased with the results.

"The Futerra and PPC have performed great," said Schingel. "There's been no erosion around the greens and I haven't hand watered a green in two years."

The Profile team was, likewise, pleased with the PPC's performance.

"Because it provided consistent, optimal moisture balance in soils that were alternately dry, then saturated, PPC was good match for this project," said Johnson.



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