



Evolve to the next level in golf course construction and Make Golf Greener!



On-Course Solutions Bunkertac Application Houghton Golf Club March 2010

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Introduction

Bunkertac is an environmentally friendly and special purpose binder specifically formulated for bunker stabilization, protection from erosion, and sand flashing and contamination prevention on golf courses. The key to the exceptional performance of Bunkertac is its linear molecular structure consisting of millions of molecules that are linked and cross-linked together creating a stable bonding matrix.

When used for bunkers, Bunkertac will meet the requirements of a flexible bound surface with a high load bearing and shear strength capacity while allowing for drainage; prevent distortion and disfiguration of the bunker's shape; prevent contamination of the sand contained in the bunker and most importantly reduce initial application, repair and maintenance costs.

When used for sand flashing, Bunkertac will actually hold the sand in place all throughout the bunker most specifically on the face and along the edges thus improving the aesthetics and ensuring that the original intended design of the bunker has been met.

Bunkertac is completely environmentally friendly, safe for animals, wildlife and vegetation and dries clear and transparent leaving the environment in its natural state. As a result it will significantly decrease the environmental footprint of golf course developments, while at the same time allowing for superior treatment of several areas and significant cost reductions.

Benefits of using Bunkertac for the stabilization of bunkers include:

- Providing a flexible bound surface with high load bearing and shear strength capacity while still allowing for proper drainage and germination
- Prevention of erosion, contamination, distortion or disfigurement
- Reduced maintenance costs and ease of maintenance
- Ease of repair to any damaged areas
- Use of an environmentally friendly product
- Reduction or elimination of the washing of the sand
- Enhanced playability
- Improved shot value
- Reduction in the chances of "ball-lie"
- Improved aesthetics



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Background

After severe rainfall it became evident that the bunkers at Houghton Golf Club were suffering from excessive water run-off, contamination as well as erosion problems. Golf Data, the company managing the construction of the refurbishment at Houghton, already familiar with the products and services offered by On-Course Solutions suggested that an On-Course representative conduct a site inspection to determine if they were able to provide the solution for the problems with the bunkers. It was determined that Bunkertac would be used on four bunkers to evaluate its performance.

Fairway bunkers on holes 1 and 5 and greenside bunkers on holes 6 and 7 were selected for the Bunkertac application.

Preparation of the bunkers for the Bunkertac application included:

- Removing the existing sand from the face and edge of the bunker
- Bowling and reshaping of the areas suffering from erosion
- Removing grass roots
- Placement of sand over the existing drainage channels for protection purposes
- Removal of all loose stones and gravel
- Final sweeping and cleaning of the surface to be treated
- Re-routing of water away from bunker (hole 5)



Erosion problem



Erosion Problem



Re-routing of water



Final sweeping



Final preparation



Repair of erosion problem

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For successful application of Bunkertac the proper preparation of the bunker to be treated is essential. Proper bowling and shaping of the bunker will lessen the amount of water run-off coming into the bunker. One of the benefits of using Bunkertac is that even with considerable amounts of water run-off contamination of the sand is eliminated or minimal even over the steepest of slopes.

Fairway Bunker on Hole 1



Before Bunkertac Application



During Bunkertac Application



After Bunkertac Application

The Bunkertac application began with placing sand over the drains for extra protection, pre-wetting of the bunker using a hose pipe to moisten and loosen the tension of the soil, a pre-coat of Bunkertac solution only followed by the remaining coats of Bunkertac and sand.

Fairway Bunker on Hole 5



Before Bunkertac Application



During Bunkertac Application



After Bunkertac Application

Bunkertac was applied evenly over the bunker using several coats with a simple pump and spray system with a specially designed spray lance to control the flow rate and ensure the specified application rate was adhered to.

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During the application process each coat of Bunkertac was given sufficient time to penetrate or soak in before applying another coat. In winter this may take up to 24 hours. This will ensure the desired penetration and avoid the formation of a skin or biscuit layer.

Greenside Bunker on Hole 6



Before Bunkertac Application



During Bunkertac Application



After Bunkertac Application

As the Bunkertac was applied sand was placed over the treated area using shovels and brooms and then Bunkertac was sprayed over the area to hold any loose sand in place.

Greenside Bunker on Hole 7



Before Bunkertac Application



During Bunkertac Application



After Bunkertac Application

If an area were to become damaged, repair and maintenance of the damaged area is simple, efficient and quick (not labour intensive or time consuming), and can be done simply by pushing the bunker sand toward the base and applying a coat of Bunkertac and sand followed by an additional coat of Bunkertac over the repaired area.



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Using Bunkertac and the application methods developed by On-Course Solutions for stabilization of the edge and face of the bunker, sand flashing and contamination prevention will provide you with not only a more aesthetically pleasing look to your bunkers but improved playability as well as a reduced impact upon the environment.

Observations and Conclusions from Bunkertac Application

- Bunker base must be moist (OMC) prior to application of product.
- All equipment must be tested (off-site if necessary) prior to product application to ensure proper functioning.
- Spray nozzles should be set to provide an even spray coat over the bunker with minimal running or draining of the diluted product mix.
- Full and proper preparation of a bunker is essential to ensuring successful results.
- If drains are in place, the product must not be applied to the marked drainage areas.
- When preparing the mix dilution, the Bunkertac is added last, directly into the water and circulated through the return valve of the pump.
- For best application, a firm round hose may be more effective than a flat hose in order to prevent kinking and allow for a smooth continuous flow rate.
- During the application each coat must be allowed to penetrate or “soak in” before applying another coat. In winter this can take up to 24 hours.
- All equipment used must be rinsed off thoroughly as soon as possible after application before the product has a chance to dry or cure.
- After application bunkers must remain free of watering, rain and any human traffic for a minimum of 24 hours. (48 hours during winter months)
- Spraying the product around the perimeter and high sides of the bunkers will assist in the prevention of contamination from fugitive material transported from fairways and landscaped areas nearby.
- Bunkertac is easier to install than other products and requires much less maintenance.



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- The areas within the bunker on hole 5 which suffered damage from erosion that were repaired by only filling with soil and hand compacting are weak points within the bunker. The creation of the culvert above the bunker will assist with this problem.
- The sprinklers and hose connection on the greenside of the bunker on hole 6 will have to be repaired to stop water leaking into the bunker when in use.
- Re-using the original sand that was in the bunkers, which is contaminated and discolored, will not yield as good a result as if this sand was replaced with new white bunker sand.

For more detailed information regarding how On-Course Solutions may assist you on your golf course please contact us today.

We offer training on the process so that your on site crews can perform applications and maintenance.

Contact us directly for further information:

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