

Making Low-Cost Bunker Sands Work

Careful examination of local bunker sands may reap big savings.

BY CHRIS HARTWIGER



Golfer expectations regarding bunkers are at an all-time high. Unfortunately, so are bunker sand costs. In this difficult economy, exploring inexpensive local sands is time well spent.



The size of many bunkers and the volume of sand required to fill them are enormous. Investigating local bunker sands that are much more affordable may be an investment that pays off significantly.

Maintaining quality at a lower cost has been the mantra of many golf facilities over the last five years as they have wrestled with difficult economic conditions. However, putting into practice what sounds good in theory can be a difficult task. Nowhere is this better illustrated than in the short-term and long-term management of bunkers. Golfers are quick to express their opinion about what they do or do not like about bunkers, and there may not be anything more divisive on the golf course than the topic of bunker sand. It seems that often the “best” sand is at a sand plant hundreds of miles away with a nearly cost-prohibitive price tag. Some courses literally have shipped bunker sand halfway across the country in pursuit of perfect, consistent bunkers, while others have avoided sand replacement completely due to cost.

Are the best bunker sands really halfway across the U.S., or are there local sands that can be used successfully in bunkers at a fraction of the cost? The purpose of this article is to review this question and equip decision makers with the tools to select bunker



Bunker sand is heavy and golf courses use large volumes each year. Shipping costs for transporting long distances can exceed the cost of the sand.



In a world of instant communication, criticism of the golf course can be shared quickly via smartphone. This picture was taken by a golfer and sent immediately to course staff for the purpose of expressing his displeasure over a fried-egg lie. Continued communication to golfers that a bunker is a hazard is still needed.



Local sand plants may be an option in your area. Be sure to know the general requirements of a bunker sand. Send any test samples to an accredited physical soil testing laboratory for analysis.

sands that will work successfully at their golf course.

ECONOMIC ISSUES WITH BUNKER SAND

Sand is heavy and needed in mass quantities. The number-one economic issue plaguing the market for bunker sand is shipping cost. As fuel prices have reached and exceeded \$4.00 per gallon, shipping costs have skyrocketed. Average shipping costs in the Southeast range from \$15 to \$30 per ton, which can be equal to or greater than the cost of the sand. To make matters worse, there is a trend in the industry to purchase sands outside the local market and, therefore, the shipping cost ends up becoming a disproportionate share of the cost. In extreme cases, golf facilities are spending more than \$100 per ton for sand, plus shipping costs, to have sand sent long distances.

At the core of many of these expensive sand purchases is a presupposition that local sands are either not available or not as good as nationally or regionally popular sands. In an era when the economics of golf are not favorable, close examination of local sands may be a wise financial move for golf facilities that need to replace sand in bunkers.

SOLUTIONS

Below are seven steps to help make a lower-cost local bunker sand work successfully on your golf course.

Step 1: Understand the Characteristics of an Acceptable Bunker Sand. There is no ideal bunker sand, but there are many acceptable bunker sands. The perception of the playing quality of acceptable bunker sands will vary from golfer to golfer, and those perceptions are subject to change as any given sand cycles from wet to dry in response to normal rainfall patterns.

The USGA has provided a bunker sand selection guide (see [How to Select the Best Sand for Your Bunkers](#)) that provides seven criteria for evaluation. This article is educational and is worthy of study, but be forewarned that ultimately selecting the best sand for your course is highly subjective, much like deciding on the flavor of ice cream

to buy at a gourmet ice cream store. They are all good, but your favorite might not be the same as mine.

Scientists have not had success in identifying a physical property or combination of properties that predict sand firmness, often one of the most discussed attributes. The article [Physical Analysis of Sands for Bunker Use](#) will be helpful in understanding the challenges in sand selection.

Step 2: Reeducate Golfers on the Role of Bunkers. Although golfers may criticize the playing quality of the sand or lament an unfortunate lie in a bunker, the Rules of Golf have been consistent that a bunker is defined as a hazard (see [Rules of Golf Definition of a Bunker](#)). As a result, one can conclude that a hazard is an area a golfer wants to avoid. Nevertheless, there is a view held by many golfers that this specific hazard ought to be maintained in a way that is minimally hazardous to one's score. An effort to reeducate golfers on the role of bunkers on a golf course is advised. Support in this area is available from your regional USGA Green Section agronomist.

Step 3: Request and Examine Samples from Local Sand Companies. Armed with a better understanding of the criteria used to select an acceptable bunker sand, contact local sand companies to see if they have a sand that might be appropriate for bunkers. It is possible that a local sand company will have no knowledge about sands suitable for golf course bunkers, but you can provide some basic information. The following quote from the previously referenced article [How to Select the Best Sand for Your Bunkers](#) should be helpful to the sand company:

As a general guideline, a sand used in bunkers should be composed of particles with a large majority in the range of 0.25-1.00mm. Silt and clay (particles below 0.05mm) should be kept to a minimum, since they are associated with surface crusting. Note that this size range should be utilized only as a first step in determining whether the sand is likely to be acceptable overall. In other words, it is unlikely that a sand that falls significantly outside this range will perform well in terms of crusting,



The way any given sand is maintained has an influence on its playing characteristics.



Using a squeegee or roller on bunker faces will allow softer sands to remain firmer and slightly crust over, which serves to reduce the potential for fried-egg lies and the severity of washouts.



Whether the sand is expensive or not, golfers must still confront the challenge of playing from a hazard.

hardness, porosity, and/or playing quality. On the other hand, it would be a mistake to assume that a sand will be appropriate for bunker use simply because it falls within this particle size range. For example, depending on particle shape, some sands that fall in this range would be considered too firm or too soft for play. Since particle size screening is a simple, inexpensive test that is performed by most sand suppliers, it is the best first step in determining if the sand is worthy of further testing.

Step 4: Use an Accredited Physical Soil Testing Laboratory.

There are numerous accredited physical soil testing laboratories that will conduct bunker sand evaluation and provide a report detailing particle size, shape, penetrometer value, crusting potential, chemical hardness and reaction, and infiltration rate. Preliminary samples that are obtained from local sand companies should be submitted for evaluation by the lab. [Click here](#) to learn more about accredited physical soil testing laboratories and to find the list of labs currently accredited by the [American Association of Laboratory Accreditation](#).

Step 5: Install a Test Bunker.

Assuming lab reports confirm there are acceptable sands from local companies, install a test bunker. Ideally, this bunker will be at the practice facility and it can be divided into several sections to evaluate multiple sands. Let the sand settle for several weeks or more and then encourage golfers to evaluate the playing quality of the different sands. Seek their opinions. Ask decision makers if one of these sands would be acceptable. Compare the cost of local sands with popular sands that must be shipped long distances

Step 6: Bunker Management. One might think the process is over, but the way that the bunker is managed does have an impact on playing quality. Some sands are firmer and some are softer. If a sand is prone to becoming soft, particularly under dry conditions, avoid the use of scarifying tines on the mechanical rake. Try to use leaf rakes or other rakes that only groom the surface. Try not to rake the faces in order to promote maximum crusting and stability. Rollers or squeegees can be used instead. If the sand is prone to firmness, use a technique that stirs the

sand several inches down to prevent the bunkers from becoming too firm.

Step 7: Player Development. The skill of the golfer is an often overlooked component of the perception of a bunker sand. Ironically, improving the skill of the golfer will improve his/her perception of the playing quality of the sand. This is an ideal opportunity for the local PGA golf professional to help golfers improve by teaching them proper bunker technique and making sure they are equipped with the proper equipment for the type of shot being played.

CONCLUSION

Controlling costs is as important as ever. While there are popular sands in most areas of the country, rising shipping costs are putting them out of reach for many facilities. Fortunately, with some basic education on bunker sand, buyers can be equipped to more closely investigate local options. It may be an education that pays off quickly.

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