

Andy Law passes on some excellent advice on what to look for when choosing bunker sand

SHIFTING SANDS



Bunker sand selection, while not the most dynamic topic at most dinner parties in the suburbs, is quite often the main topic of conversation between golfers at the 19th!

This is the reason that if you have the much envied role of selecting the right sand, or even reducing the candidates down to the last three like the "Pop Idol" final, you must be equipped to make the right choice.

Like anything we undertake in life, replacing bunker sand should be 90% preparation followed by 10% perspiration. This approach should prevent the 100% aggravation should you make the wrong choice!

Starting at the very beginning and the initial question. What is a bunker and why do the architects, in their wisdom, draw them on their course designs?

A bunker, in terms of a golf course, is a man-made hazard which is normally strategically placed on a line between tee and green. The aim of the bunker is to make the golfer think about where they will place their shots to ascertain the shortest and safest route from tee to green.

Before we start to ring round the vast list of bunker sand suppliers some thought should first go to the positioning of the existing bunkers.

1. How long ago were the bunkers last refurbished?
2. Does the bunker still come into play on the hole?
3. Is the shape and size of the bunker still useable?
4. Can the surrounds be maintained easily and safely?
5. What was wrong with the last sand selected?

Questions two and three should maybe be approached with the assistance of the club professional or, better still, the clubs preferred golf course architect.

The modern game has added length to all of our games, well with the exception of my own that is, so quite often the bunker that came into play 20 years ago is driven over by even mid range handicap golfers.

Treat the project to replace the bunker sand as an opportunity to review the bunkers themselves and to ease any difficult or even dangerous bunker surround areas to make your greens staff safer.

Changing all the bunkers on a typical 18 hole course will probably involve around 75 to 90 of them and quite often this will amount to between 600 and 1000 tonne of

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The BRTMA is a collaboration of experience and expertise in the manufacture of Rootzone and Top Dressings. Member companies have committed themselves to supplying top quality materials only after they have been subjected to standardised, quality control tests. The appointment of STRI as the testing house for the Association in June last year underlines the desire of member companies to improve standards within the industry and differentiate between 'quality' products and others.

The same testing procedures will apply to all members and thus one firm's products will be directly comparable with another's. Top quality will mean the best for a given application. For far too long materials which are inappropriate for the purpose have been bought and used, the yardstick being one of price alone.

BRTMA members are also working towards the preparation of guidelines for the proper handling and installation of materials to achieve best performance. They hope to work with architects, agronomists and contractors to establish standards, which will benefit everyone in the industry. Founder members of the BRTMA are:

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For further information visit the Association website at www.brtma.com

sand. Of course this amount has to first of all be removed before being replaced and therefore you could be moving up to 2000 tonnes of material.

Do you have the staff to cover renovating the bunkers and continuing the day to day running of the course?

Perhaps you need to involve a contractor. The first call in this case should be to the British Association of Golf Course Constructors (BAGCC). All member companies have had their work and companies vetted to ensure they meet a very high standard.

Back to the definition of a bunker, a man-made hazard which lies between tee and green. A hazard yes but one which must be clearly visible from the tee to give the player an opportunity to play the hole and avoid the trap.

Clearly our first priority then in considering which sand goes forward to our grand final should be colour. A bunker sand should be light in colour although not to the extent that we need to wear sunglasses to play the hole.

Our next criteria should be shape, both of the bunker faces and of the sand we are going to select.

Most inland bunkers have shallow faces and gentle slopes on the face from the bunker. The sand is then normally placed in the base and also up the face to just short of the lip of the bunker.

Here is a trick you can try at home. Take a dozen marbles and try to stack them in columns and rows at the top of a 1 in 10 hill. The hill has of course to have a smoothed surface like the subsoil in a prepared bunker. Bet you your next year's subscription to BIG-GA you can't do it.

To be able to retain sand on any slope the sand shape must be at least sub-angular. This is one of the most



common faults in sand selection. We get the colour right and particle size perfectly aligned to that in our root zone, and forget to check the particle shape.

To summarise our selection categories so far:

1. Colour - Light clearly visible
2. Shape - Sub Angular to Angular

The final criteria should be particle size, however some thought should go into location of the sand and long term availability of the material.

So what is the ideal particle size for a bunker sand?

Naturally links course are different from inland courses and the particle size recommendations for

USGA recommendations

Fraction	Size (mm)	USGA root zone mixture	Bunker sand
Gravel	2 - 4	≤ 3%	≤ 3%
Very coarse sand	1 - 2	≤ 10%	≤ 7%
		<small>Total gravel plus very coarse sand</small>	
Coarse sand	0.5 - 1.0	≥ 60%	≥ 65%
Medium sand	0.25 - 0.5		
Fine sand	0.15 - 0.25	≤ 20%	≤ 25%
Very fine sand	0.05 - 0.15	≤ 5%	
Silt	0.002 - 0.05	≤ 5%	≤ 3%
Clay	<0.002	≤ 3%	
Total very fine sand, silt, clay	<0.10	≤ 10%	



the bunker sand is dramatically different. I am going to cover the USGA recommendations that cover inland golf courses, however I will briefly touch on sand selection for links bunkers also.

The particle sizes you will see are virtually the same as for a USGA root zone sand. The critical difference is in the shape of the sand and that the fine sand criterion works better when it is nearer to 20% in bunker sand and nearer to 15% in root zones.

This particle size will give very high hydraulic properties which if the bunkers are properly drained, should keep the sands moist and never waterlogged.

Ideally the sand should interlock and consolidate without becoming "solid" and compacted. This will prevent the "poached egg" effect when the ball plugs leaving barely a quarter of the ball above the surface of the sand.

Sands for links courses are quite often a rounded particle in the medium fine fraction, ie the majority of particles fall between 0.150 and 0.5mm.

Hydraulic properties are relatively low, however, when you consider that the bunkers are often over two feet deep. This ensures good

drainage from the surface of the bunker.

Links bunkers are normally Pot shaped where the sand is placed only in the bottom of the bunker and for this reason the round sand particles work well.

Links sands tend to compact rather than consolidate and it is this firming up which prevents the poached egg effect in these type of bunkers. To summarise:

Bunker Sand Selection Criteria for Inland Golf Courses

1. Colour Light, Clearly Visible
2. Shape Sub Angular to Angular
3. Particle Size 0.150mm to 1mm

Finally, when you are drawing up your shortlist of suppliers I would urge you to look up the member companies of the British Root Zone and Topdressing Manufacturers Association (BRTMA). These companies ensure you get a premium product which is guaranteed to meet your specification and which will be available for years to come.

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Now we brush all the fairways and rough each morning. It only takes us an hour and a half to two hours and then we can start mowing 10 minutes later. I've been doing it for a month now and I can honestly say I don't think we've left any clumps of clippings anywhere on the course."

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