



Capillary Concrete

Achieving better quality with lower costs

Kneale Diamond – Capillary Concrete 12th November 2019 - DGA

What is a bunker?



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“A 'bunker' is a hazard consisting of a prepared area of ground, often a hollow, from which turf or soil has been removed and replaced with sand or the like”

Fairway Bunker



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Waste Style



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Steep faces?

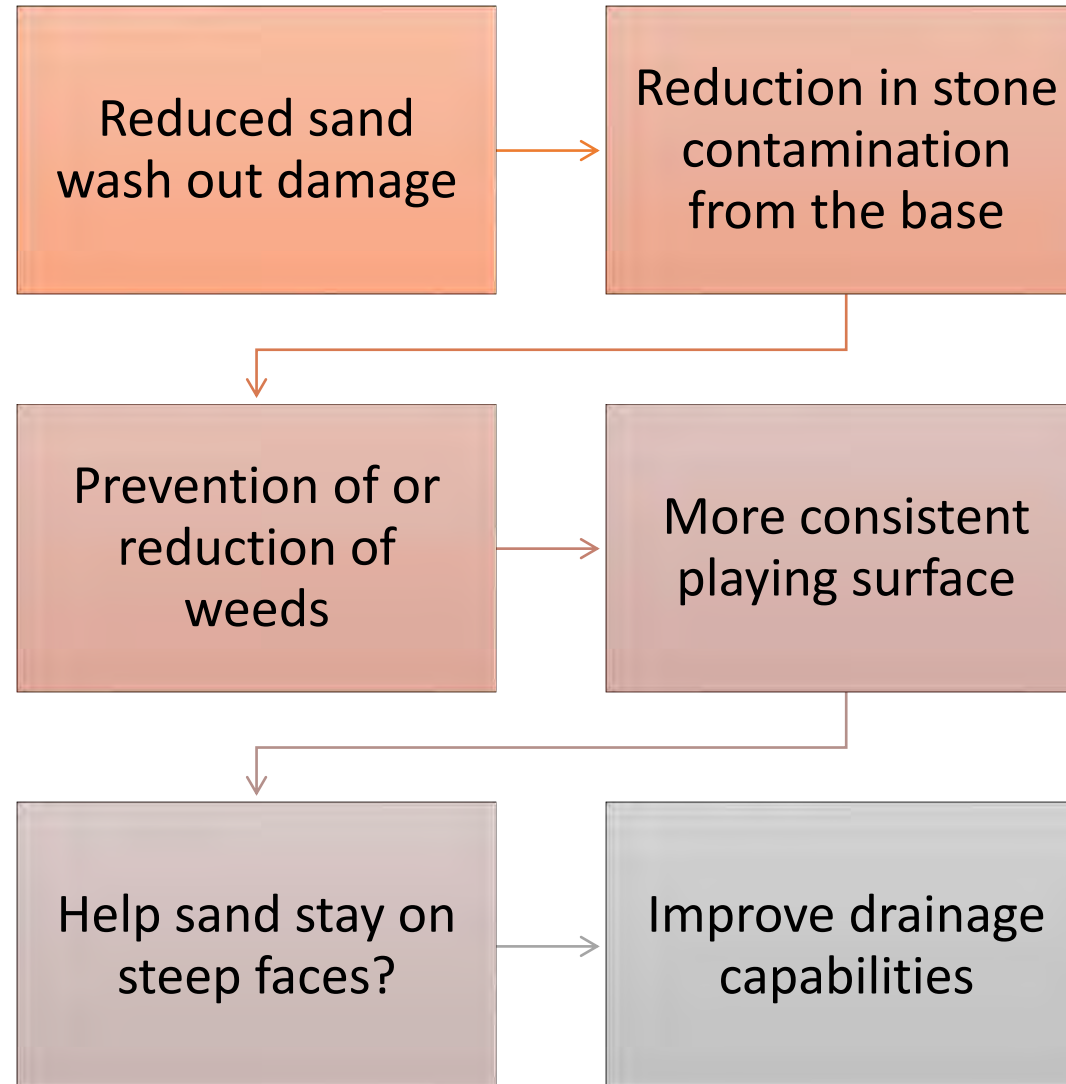


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Benefits of Bunker Liners



Associated problems



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Flooded bunkers
Washout damage
Poor drainage





Animal Damage





Biggest pest!



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www.alamy.com - BEE6N0

6 simple steps



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1. Clean-out Bunker



2. Verify Drainage



3. Spread Capillary Concrete to 2 inches depth



4. Finish roll the surface



5. Allow to cure for 24 hours



6. Install sand and get back to play



Before & After



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- Durability of concrete product over 1000 psi
- Environmentally friendly and ability to recycle
- Moves moisture both ways
- Easy installation undertaken with own staff
- Not as dependant upon weather conditions
- 10 year financial guarantee
- Competitive price and low cost of lifetime ownership



Sand Depths

2" (50mm) faces

4" (100mm) base

Based on USGA guidelines





- Particle size (0.25-1.0mm majority ideal)
- Particle shape and penetrometer value (poached egg test)
- Crusting value (related to silt/clay percentage)
- Colour (subjective value)
- Hardness of sand and pH
- Overall Playability (subjective value)
- Infiltration rate (min 500mm p/hr up to 1,250mm p/hr)

Angle of repose for sand



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- Dry sand is 34 degrees

- Wet sand is 45 degrees



Change in maintenance tasks



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- Raking – hand or motorised
- Edging – flymo, reciprocal edger, strimmer, hand trim
- Redistribution of sand, measuring depths
- Flat raking edges for firmer slopes (rolling like done here)
- Irrigating sand – improve firmness and stability
- Stone picking
- Decompaction of bases – rotavator
- Pushing washouts, pumping out water
- Weeding
- Topping up sand regularly

Flat rake edges



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Effects On Sand – Transportation of Moisture

Ideal sand vs. dry sand

- Slightly moist sand tends to be firmer and reduce plugged ball lies
- Slightly moist sand does not slump during hot dry weather



Ideal Moisture Levels

- Moisture is key in producing top-level playing conditions
- Capillary Concrete allows you to obtain ideal moisture levels



Capillary Hydroponics Turf System

Superior Quality Turfgrass
with Less Water and Maintenance



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Hydroponic Turf



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