DiatoPOR

DiatoPOR™ consist of pure calcined diatomaceous earth (shells of freshwater diatoms) which is fetched by open cast mining from sediments.

Chemically, **DiatoPOR™** consists to more than 90 % of pure SiO_2 is inherently stable. Neither does it swell nor does it shrink. Furthermore, it does not decompose. Physically, it consists to approximate 90 % of middle size pores, is chemically neutral (pH value 7), exhibits no ion exchange capacity and does not bind any nutrients. Moreover, it does not oversalt.

DiatoPOR™ increases the water storage capacity in sandy soil constructions and enhances water drain in saturated soils.

Diatomaceous earth like **DiatoPOR™** has been tested and approved as a soil amendment according to the USGA guidelines.

DiatoPOR™ exists as Green Plus® 0–3 mm and as Fairway Plus® 1–5 mm

New constructions

According to a considerable number of test results from Europe as well as the USA and according to a great many green keeper's reports of positive experiences, the characteristics of AXISTM Fine are the following:

- The percentage of middle size pores is increased.
- In substrates with a too high permeability, the water retention is enhanced.
- In impermeable substrates, the water permeability is increased.
- The root mass is increased.
- In new pitches, insufficient turf covers are improved quickly.

Therefore: Add 1.5–2 kg Green Plus™/m²
to the topsoil mixture!

Green-Plus® in Greens and Tees

Maintenance

In case of root degeneration caused by hardening of the root zone:
After aeration with hollow tines, apply 50–100 g/m² of Green Plus™ to the top dress sand. This will ultimately lead to a deeper root system and higher resistibility of the turf.

In case of insufficient water drainage: Repeated aeration with a simultaneous application of 100 g of Green Plus™ per procedure will lead to enhanced flow conditions.

In case of a "dry spot":
Dry spots caused by hydrophobia may be humidified again, if Green Plus™ is applied during the aeration process.

Therefore: Top dress 0.1 kg Green Plus™/m²
during each aeration process!

DiatoPOR

Fairway Plus® as a decisive factor for the successful construction of the pitchs in stadiums

Example Eindhoven

In the summer of 2007, the stadium of Eindhoven was in need of a new pitch. A top quality natural turf available at reasonably low expenses was requested. It was supposed to be playable as soon and as long as possible. The company Agterberg b.v. De Bilt tried to meet these requirements.

Resistant and effective substratum:

The substratum of the turf of the arena in Eindhoven was designed highly permeable to water. In order to enhance the shearing resistance of the pitch, the substratum was built with the help of Fibreturf®, a patent-registered sandpeat mixture with polypropylene reinforcement fibers. In order to achieve both higher water drainage and better subsurface air conditions, Fairway Plus™ served as the ideal soil amendment.

Key moments of a successful renovation:

18.06.2007 Removal of the old topsoil mixture, placement of the new topsoil and sowing of the new turf!
01.08.2007 First utilization of the pitch during the presentation of the new squad.
25.08.2007 First home game within the scope of the Dutch professional league «Eredivisie»

Therefore: Add 1–1.5 kg/m² of Fairway Plus to the Topsoil mixture!

DiatoPOR improve the root growth at shrubs and trees

Water saving natural granules for the root zone

- store water and enhance the soil aeration
- minimise losses of water and offers niches for soil biota
- enhance the root growth with more and stronger haustoria
- totally mineral, does not expand and does not diminish
- always wettable and indestructible

Application in substrata

- Add 10–20 % DiatoPOR™ to the substratum, soak, and plant the shrub or tree

Salting of the root zone by injection lance

- 30–40 injections with approx. 100 g per cut in a depth of 30–50 cm help the tree to more air and water.

Picture: 19.12.2007 illuminated at the left. In the central afterimage: open flaps

DiatoPOR

New results to deal with the conservation of water

In June 2007, James A. Murphy, Rutgers, The State University of New Jersey, recapitulated the results of perennial tests for the utilization of amendments during the construction of golf greens and tees hitherto attained (see Murphy, Rootzone Amendments for Putting Green Construction/USGA, 2007).

On the whole, several pure sand constructions as well as sand constructions combined with various organic and mineral soil amendments had been tested.
Indeed, it is feasible to build greens and tees with sand only. The notion, however, that the accruing organic material would eventually mutate and become an 'amendment' which disperses in the topsoil mixture has been proved incorrect.
Instead, moldering leaves and root particles are more likely to amass at the surface and felt. Accordingly, the tomentum has to be removed and this obviously results in more work.
Furthermore, it has been observed that depending on the amount of tomentum, the need for irrigation increases. Hence, greens that have been built with sand only signify higher costs.

Construction with organic amendments: Organic amendments such as peat, compost and several further products with different brand names, on the one hand, can be used according to the relevant recommendations. The choice of the right product, however, is often difficult and a long lasting constant quality may be a challenging issue.

Construction with mineral amendments: With regard to mineral amendments, on the other hand, it has been observed that consistently finely granulated, dry products can be applied more easily than organic substances. At first, all the approved products on the basis of diatoms, zeolite, expanded clay and lava sand effect an improved growth of agrostis based turfs. Ultimately, this has been attributed to more permanent water availability for the plants. Moreover, a superior cation exchange capacity has been observed after the use of zeolite. This led to a better fixation of nutrients.

However, a satisfactory conservation of water could only be guaranteed when diatomite products were applied.

Additional Irrigation	mm		in %	
Substratum	2001	2002	2001	2002
Sand 100%	36.42	35.00	100.00	100.00
Sand 90/Peat 10	32.69	27.15	89.75	77.58
Sand 90/AllGro 10	35.51	29.62	97.49	84.62
Sand 90/Diatoms 1 10	31.80	26.26	87.31	75.04
Sand 90/Diatoms 2 10	32.11	26.7	88.15	76.27
Sand 90/Profile 10	41.25	37.39	113.25	106.82
Sand 90/Zeolite 10	34.90	37.67	95.82	107.62
GD95			6.096	

Source: James A. Murphy; Rutgers, State University of New Jersey / USGA; 2007. The data have been adapted to metric measures.

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