

NATURAL ZEOLITES - BENEFITS TO GOLF GREENS AND OTHER TURFED SPORTING SURFACES.

GOLF GREENS

Background

The United States based GA has set standards, adopted around the world, for the construction of golf greens. In essence, this construction consists of a sub-base of 100mm gravel overlain by 300mm of sand mixed with some organics, then turfed.

The purpose of this consistency of construction is to provide for good drainage and at the same time provide for a consistency of golf ball behaviour on the green itself. Greens also need to withstand human traffic without damage to the surface.

The problems encountered with such construction is there is little within the sand to hold any applied nutrients, water or micro-fauna.

The abilities of natural zeolites to hold and slow-release both moisture and nutrients is well documented. These abilities are further enhanced by the hard, durable and granular sand-like particle, characteristic of the Supersorb zeolite which provide compliance, including mechanical and weathering stability, with GA specifications.

Some of the problems encountered with golf greens.

Because of the highly limiting nutrient and water retention within the golf green to support healthy turf growth, golf greens need to be watered frequently and, in the summer months, daily. Frequent applications of nutrients are also required, usually fortnightly. Neither regime encourages turf roots to any depth. This means, particularly on windy, hot, dry days, the shallow rooted turf is vulnerable to excessive drying, with possible loss. Further, shallow matting of the turf roots, known as thatch, occurs which limits oxygen supply and water penetration. This condition can be relieved by core drilling. All these adverse features add to increased attention, labour requirements and, of course, ongoing costs. Further, the applied soluble fertilisers are most inefficient, with excesses quickly washed below the root zone, to enter sub-surface drainage systems and eventually create environmental damage by supporting algal and other unwanted plant growth in catchment ponds or nearby streams. The addition of Supersorb's zeolite can reduce these ongoing costs while adding to the quality of the turf itself.

Trials conducted at the Coolangatta Tweed Heads Golf Club course in Northern New South Wales have clearly demonstrated the inclusion of zeolite resulted in turf root systems extending from the normal maximum of 45 mm to 75 mm plus, up to 235mm. The root density also increased.

Methods of Zeolite Application

The following comments, though applying to golf greens, are also applicable to other sporting surfaces. Zeolite is best applied during the construction phase but can also be applied during renovation.

1. Construction

The preferred procedure is to include zeolite as a sand/zeolite mix to a depth of approximately 150 mm. By including the zeolite in such a layer, it is located where feeding plant roots can seek out both the contained nutrients and the moisture. This process assists in encouraging turf roots to increased depths. For best results, it is desirable the sand/zeolite ratio should be not less than 15:1.

2. Renovation

2.1 Core Holes

The normal process of coring greens for aeration provides a ready avenue to include zeolite instead of sand. In such applications, it is best to prepare the zeolite beforehand by soaking it for about three days in a saturated condition with the normally applied soluble fertilisers, such as ammonium sulphate or urea. A ratio of 30 parts of zeolite to one part fertiliser should be ample. The application rate of zeolite for a cored surface would be approximately 1.5 kg per m², with this application rate also providing a little zeolite for light topdressing. The applied zeolite can be brushed or washed into the core holes.

2.2 Topdressing

Zeolite prepared prior to application in the same way as described above should be added at the rate of approximately one kilo per m². Zeolite can also be applied without pre-treatment. However, in this case, it is important to note the zeolite may capture a portion of the initial fertiliser application and so compete with the turf. Once the zeolite is nutrient-charged, it will then act as a slow-release fertiliser.

A fundamental key to success in using natural zeolites is the technology of modifications and amendments that are applied by Supersorb to their specialised products.

Zeolite Source