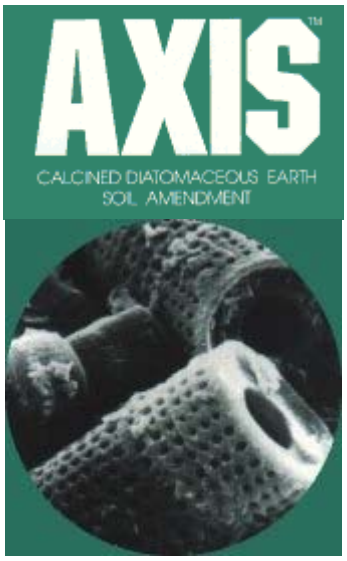
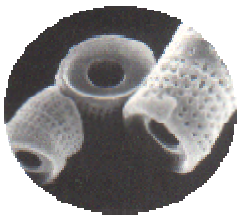
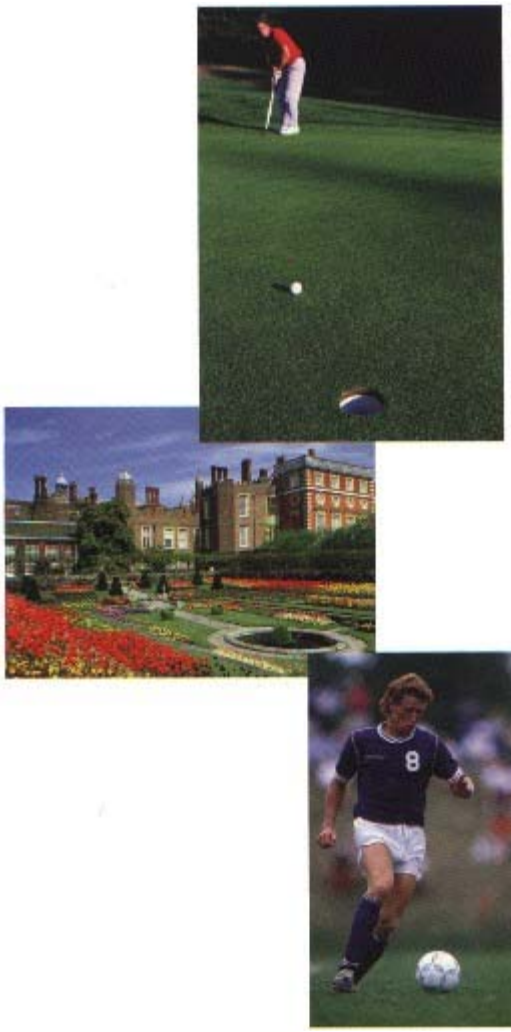



**Adding non-compacting pore space with AXIS is the key to better turf performance and easier turf management.**





# *You can keep treating symptoms. Or improve your soilstructure once and for all with AXIS.*

Howmuch time and money is spent dealing with turf maintenance problems thatcould be avoided if only your root zone was in better condition?

It's basic soil physics and agronomics. Better soil structure -- specifically,the increase of permanent, non-compacting pore space -- leads directlyto better turf results and easier maintenance. AXIS is a scientificallyproven way to add permanent porosity to your soil, which leads to positiveturf response, and reduced maintenance requirements.

AXIS calcined diatomaceous earth (DE) soil amendment changes the physicalstructure and texture of soil like no other amendment does because of thecombined effects of its low bulk density, unique internal continuous porosity,and durability. The results you can expect are based on solid science andthe experience of turf professionals around the world. AXIS meets or exceedsall USGA Green Section recommendations for stability, infiltration, porosity,and particle size distribution.

Adding AXIS is one permanent soil improvement you can make that willpay back dividends with better turf and plants, and easier maintenancefor decades to come.

# The amazing diatom

Naturedesigned this tiny organism for efficient movement of water and air. Likea microscopic hard sponge, the diatom holds the key for adding permanentporosity to soil.

**Calcined for extreme durability**
AXIS is kiln-fired at extremely high temperatures, around 1800°E, to create a hard, durable, yet highly porous particle. AXIS is stableunder temperature extremes and all kinds of moisture conditions. Universityresearch shows AXIS behaves like sand when subjected to repeated freeze/ thaw cycles. Chemically inert, AXIS will not interfere with soil chemistry.

**AXIS helps balance air and water in soil**
University research shows the natural porosity of AXIS gives you morelatitude in turf management during both droughty and extremely wet conditions.AXIS helps modify both extremes in the soil because of its unique honeycombstructure.

**Helps flush salts from soil**
Adding continuous soil porosity with an inert product such as AXISimproves overall water movement in soil, which in many cases can help removeundesirable salts.

# AXIS improves soil structure in a wide variety of applications:

Wherever plants grow, they grow better when soil conditions are improved.AXIS amends virtually any soil to permanently improve its structure andtexture. Added to heavy clay, AXIS makes soil more friable. Added to sand-basedsoil, AXIS helps it retain more moisture. For loamy soils, AXIS helps balancethe air and water content in the soil for easier maintenance and reducedinput requirements.

## Golf Courses

If a golf course green hosts 40,000 rounds per year, this foot traffictranslates to approximately 2,000,000 foot-falls on every green. Addedto equipment weight during mowing and other maintenance, it's easy to imaginethe tremendous physical forces causing soil compaction.

AXIS resists compaction because of its extremely low bulk density anddurability. When used to modify greens soil profiles, during new constructionor soil modification programs, AXIS helps any soil resist the damagingeffects of compaction.

AXIS amends USGA specification sand greens, both fine sand and coarsesand, to enhance greens performance. For fine sand USGA greens, AXIS increasespore size distribution to enhance drainage characteristics.
For coarse sand USGA greens, AXIS helps retain moisture in the rootzone by holding water at plant-available tension levels.

**Use AXIS all around the course**
Many courses also use AXIS to treat walk-off areas, tees, and otherturf areas subject to heavy foot and cart traffic. Additionally, AXIS iswidely used in flower beds, for backfill around new tree plantings, andfor container plants, such as located on patios and entry areas.

## Sports Fields

With heavy play and practice schedules, sports fields easily becomecompacted, resulting in worn or bare turf areas. By adding porosity tothe soil with AXIS, even the hardest native soils can be amended to allowturf to recover more quickly, and respond faster to regular maintenance.Additionally, improved soil allows fertilizers and pesticides to be moreeffective, sometimes at lower rates, to produce a better playing surface.

**World Cup-quality soccer fields**
The J-Village World Cup Soccer Training facility in Japan is composedof 11 soccer fields. Each was constructed with AXIS. Prior to construction,AXIS was compared with other DE and clay-based amendments. After 18 monthsof extensive on-site field testing, AXIS was chosen as the most efficientand cost effective amendment. The result is one of the world's largestsingle applications of inorganic soil amendments.

**NFL-quality football fields**
The innovative new NFL field in Baltimore, designed by Vince Patterozzi,features AXIS as an integral part of the system. "The natural porosityand durability of AXIS makes it as near the ideal soil amendment as I'veseen. And I've seen them all," says Patterozzi.

## Landscapes

Landscape architects are highly skilled at creating beautiful outdoorspaces, designed to refresh the spirit and serve a wide variety of socialfunctions. Sometimes the condition of the soil at landscape installationsis the last budget item to be considered, yet it can be the best way toensure success.

Soil amended with AXIS helps ensure that the original designs performas the architect intends. Trees, shrubs, annuals, perennials, rooftop gardensand container plants respond better with AXIS in the soil mix, includingthose specified for challenging urban environments.

A University of Florida study showed that AXIS added to the soil mixwith container-grown Hibiscus, for example, enhanced plant growth up to40% due to stronger, healthier roots.

Soil experts at the Getty Fine Arts Museum in Los Angeles, USX HeadquartersBuilding in Pittsburgh, and other prestigious installations specified AXISto help ensure the integrity and performance of the architect's designs.Says one landscape architect, "AXIS is like a permanent insurance policyfor plants. It provides better performance, and peace of mind."

# Application Guidelines

## New Construction And Renovating

AXIS is very effective when used to renovate greens, tees, and heavilycompacted turf areas such as cart paths, walk-off areas, and for sportsfield renovation projects.
AXIS is most effective when added 10% by volume in the top 6' of thesoil profile. For applications where soil is mixed prior to application, such asgolf course greens mixes, AXIS incorporates very quickly and uniformlywith all types of sand and sand/peat blends.
For applications where soil is amended in situ, AXIS is applied byspreading on the surface, then tilled into the soil profile. For renovation, following removal of old turf, and prior to final grading,AXIS is applied 10% by volume to the top 6' of the soil profile, then tilledin.

**Typical Application Guidelines:**

Add 900 to 1300 lbs. (equalling 10% by volume) of AXIS per 1000 square feet. Rototill 4' to 6' deep to incorporate.
**OR**
Premix 10% AXIS by volume with sand/soil mix, then apply this mix tothe top 4' to 6' of soil profile. For calculation purposes, 10% AXIS byvolume equals 70 pounds of AXIS per cubic yard of mix.

## Topdressing

A 50% AXIS, 50% sand blend is a highly effective topdressing when appliedin conjunction with core aeration for soil modification.
For topdressing as treatment for thatch buildup, AXIS adds oxygen tothe thatch layer to encourage decomposition, and adds permanent pore spaceto soil as it works down through the thatch layer over time. Ask your AXIS dealer for more information about AXIS used as a topdressingcarrier for microbial inoculants to increase beneficial microbial activityin soil.

**Typical Application Guidelines:**

A 50% AXIS / 50% sand mixture is used for topdressing problem areas.A 90% sand / 10% AXIS mixture is used to topdress previously amended soilas a preventative measure.
A light topdressing with 100% AXIS helps reduce algae build-up, asreported by many superintendents

## Landscape and Horticulture

AXIS helps promote healthier turf and plants with less water use, reducefertilizer requirements, reduce soil compaction, improve drainage, andreduce the loss of new sod.
There are as many ways to apply AXIS for landscape purposes as thereare ways to grow plants, from rooftop gardens to urban trees. Followingare the most common applications of AXIS to enhance turf and plant performancein various landscape requirements.

**Typical Application Guidelines:**

*For new lawn seeding or sod preparation*
Rototill or pre-mix 1 to 3 pounds of AXIS Fine or Regular per squarefoot of surface area into the top 4' to 6' of soil.

*For rooftop gardens and flower beds*
Rototill or pre-mix 10% to 20% by volume of AXIS Fine or Regular intothe growing medium.

*For shrubs, ornamentals, perennials*
Uniformly mix 10% to 20% by volume of AXIS Regular with the soil fromthe plant hole. Backfill with the AXiS/soil mix.

*Trees, and urban trees*
AXIS helps reduce the root-damaging "bath-tub" effect of trees plantedin poor soil. Apply 10% to 20% by volume of AXIS Regular to the backfillmix. Ask your AXIS representative for additional details on ways to treatthe"bath-tub" effect for urban tree plantings.

*Interior plants, container plants*
To create an ideal potting soil, add 10% to 20% by volume AXIS Regular.