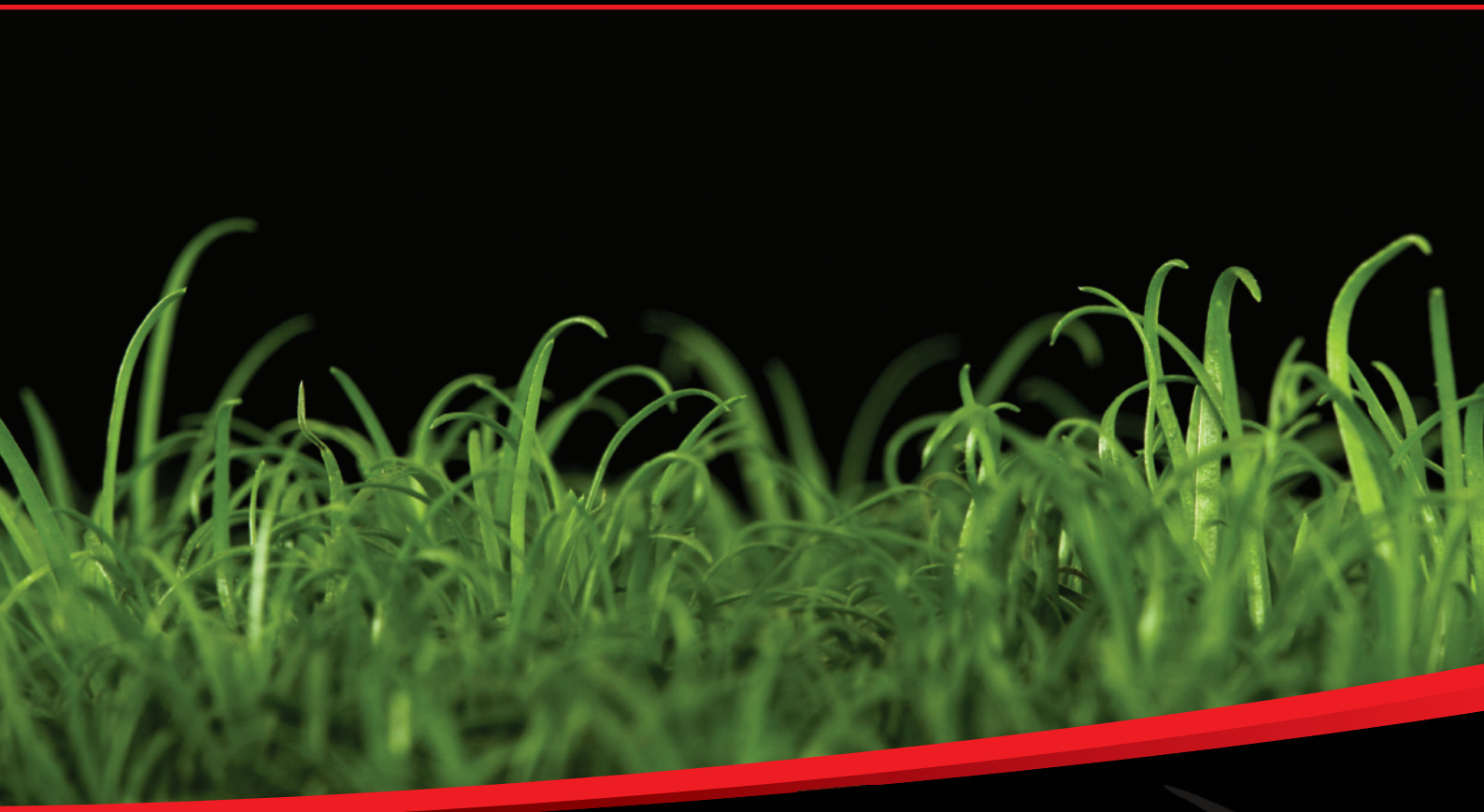
Maintenance Guidelines



Fibresand

Reinforced Pitches

Durable • Hardwearing • Improved performance

Congratulations

on choosing Fibresand® Technology.

Here's a handy guide on how it's made, how it works and how to look after your surface - maximising its life and performance...

Fibresand

Reinforced Pitches

www.mansfieldsand.co.uk

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Introduction

For any club or organisation who wishes to install a **FIBRESAND®** reinforced pitch it is essential that management and maintenance practices are undertaken to maintain the quality and longevity of the surface. Correct maintenance of the pitch will ensure that it continues to cater for the needs of the users and is able to withstand additional pressures placed upon it during periods of inclement weather.

Historically many winter games pitches have been maintained using, what is loosely described as, traditional 'groundsmanship techniques'. Due to the demand for superior playing surfaces there is now the challenge to produce pitches that will satisfy the requirements of a new generation of professional players. Players require a firm, free draining surface on which the game can be played at pace without being hampered by poor conditions under foot. It is vital that the management of the pitch is centred around maintaining as healthy a sward as possible to achieve the required standard.

Normally during the construction of a **FIBRESAND®** reinforced pitch, a new drainage system would be installed. The drainage would be capable of removing large amounts of water quickly and efficiently thus preventing water logging, one of the common problems for many traditional pitches. The drainage system would normally be overlaid with at least 200mm of pure sand lower rootzone followed by 100mm of the fibre reinforced, sand-soil upper rootzone, which can be formed by one of two alternative methods:-

1. direct method: lay 100mm of fully premixed **FIBRESAND®** reinforced rootzone.
2. indirect method: lay 70mm of unreinforced sand-soil rootzone followed by 30mm of Fibresand Concentrate, then thoroughly mix the two materials using power harrow in order to achieve 100mm of the desired Fibreturf rootzone.

A high sand content, typically 80% by weight, is advisable in order to promote good surface drainage characteristics whilst a fibre content, typically in the range 0.25 - 0.35% by weight, ensures optimum reinforcement of the rootzone thus promoting good surface stability. It should be noted that **FIBRESAND®** reinforced pitches are considered by many to hold certain beneficial qualities over other types of reinforcements currently available, for example needle-punched matting in filled with rootzone or synthetic fibres punched directly into the rootzone. In the main **FIBRESAND®** reinforced pitches can be maintained without compromising the integrity of the rootzone and the surface, therefore management practices such as scarification and aeration can be carried out with no adverse effects to the stabilising material. As such, management of the pitch can be centred around producing a clean healthy sward which is free of organic surface accumulations.

The ingress of Poa annua (annual meadow grass) and the subsequent thatch accumulations associated with this species are likely to be the cause of potential problems on any pitch as it matures. As such, management of the pitch should be along modern lines, utilising equipment and techniques to prevent Poa annua from taking hold. The desirable Lolium Perenne (perennial ryegrass) should be encouraged to flourish and form a suitable sward. To achieve a clean open ryegrass sward it is essential that the appropriate machinery is available to the groundstaff. Existing users of **FIBRESAND®** reinforced pitches are now seeing the benefits of making such machinery and equipment available to their groundstaff.

Clubs in the past have invested heavily in new construction or refurbishment but may not have provided additional funding for machinery and equipment to maintain these pitches effectively, only to find that after two or three seasons the pitch is in need of major works once again. To achieve the desired top quality playing surface the guidelines on the following pages should be followed.

What are they - How do they work?

Fibreturf is the name given to natural sports turf growing in a sand dominant rootzone that contains synthetic fibres. It has been developed in order to obtain greater use out of natural turf whilst maintaining the high quality of surface demanded by present day sports users.

The aim is achieved by mixing silica sand, organic matter, 35mm rigid polypropylene fibres to produce a completely homogeneous blend, thus producing a 'fibre reinforced' or 'fibre stabilised' upper rootzone The natural turf finish is then produce by either seeding directly into the **FIBRESAND®** reinforced rootzone or by laying Custom Grown Fibreturf which has been pre grown by specialist turf growers.

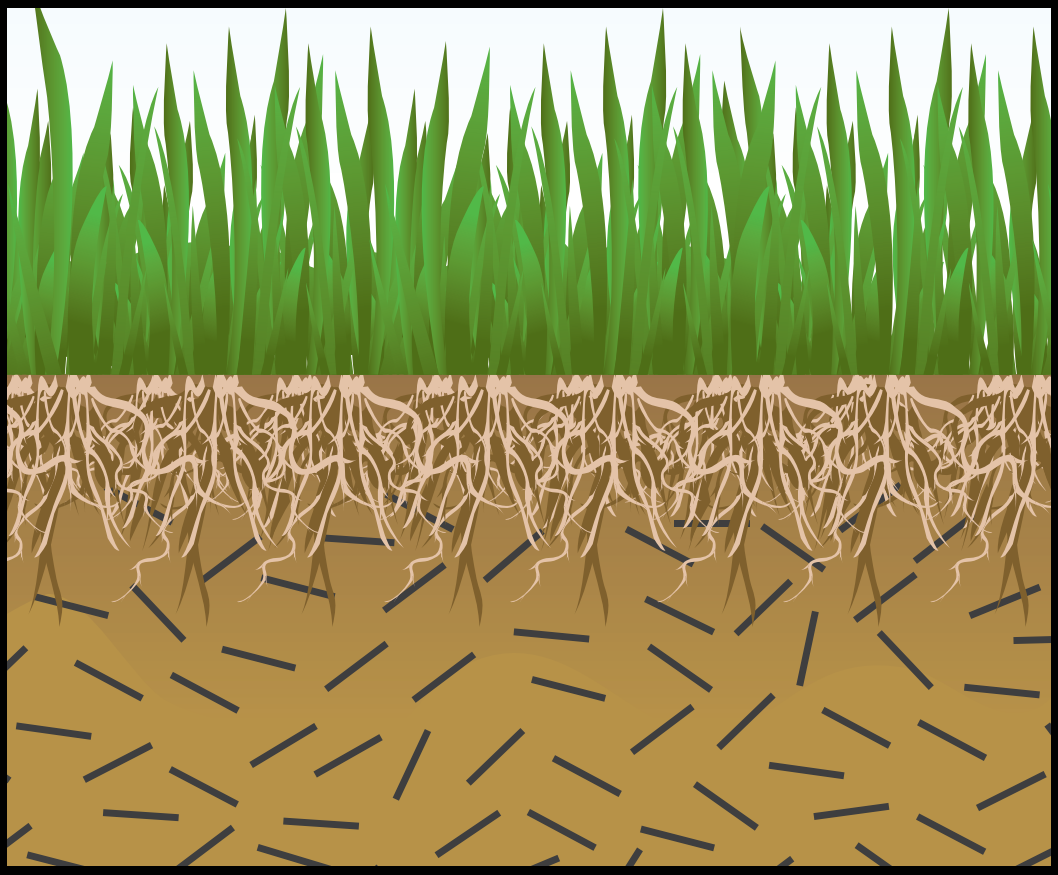
The three components all have important but separate functions:-

Sand: Sand gives the rootzone its free-draining characteristics so that any surface water resulting from heavy rainfall is removed as rapidly as possible. The grade of silica sand can vary dependant upon end-use but in all cases will have been produced in a hydraulic classification process to give a clean, narrow graded material.

Organic Matter: Organic matter provides the nutrient source vital to healthy growth of the grass plant. It also provides a moisture buffer during periods of dry weather. The type of organic matter may also vary dependant upon end use but typically will consist of a selected quality screened topsoil, PAS 100 compost or a blend of both.

Polypropylene Fibres: Rigid staple fibres, distributed randomly throughout the rootzone, impart immense three dimensional strength and being rot proof they can be considered to act as a mass of indestructible synthetic roots both reinforcing and protecting the natural turf roots. The fibres have a dramatic effect in stabilising the rootzone there by reducing surface deformation and minimising any break up of the surface by effectively resisting the tearing action of studded footwear.

The net result of the **FIBRESAND®** reinforced rootzone blend is to enable the production of a free draining, hard wearing, durable natural turf surface.



RootZone Technology

= Rigid Polypropylene Fibres

Fibresand Reinforced Pitches

Irrigation

If an existing system is not in place an automatic irrigation system would normally be included in the construction of a new **FIBRESAND®** reinforced pitch and this should be used as a management tool to encourage a deep rooted sward. After initial construction and when the new seedlings have established a sufficiently stable, deep root mass, a policy of drench and drain should be adopted in order that the roots of the grass plants will follow the water down through the rootzone profile. Irrigation should not be undertaken on a little and often basis as this will encourage shallow rooting and poa annua infestations.

During the preparation for matches the immediate surface should not be allowed to dry out as this may lead to a reduction in surface stability. If the pitch is allowed to become too dry on the surface damage may occur, particularly during scrums if the pitch is used for Rugby Union, this in turn will lead to deterioration in surface levels and the subsequent damage may be difficult to rectify during the winter months. Regular watering of the surface two to three days prior to a fixture will maintain a stable playing area with a good stud hold, and is preferable to drenching the surface on match days which should be avoided. Watering on a matchday should be confined to slickening the surface prior to kick-off. Only on days of extreme temperatures should additional matchday watering be necessary.

Aeration

Aeration is a vital component in producing a sward able to withstand the rigours of a full season's use. It serves many functions and can be undertaken in different forms, but in the main aeration should be carried out using punch action equipment. These machines can be best utilised if fitted with needle tines which aerate the surface at close centres. This action maximises the air filled porosity of the rootzone while at the same time causes minimal surface disruption and also less rootzone compression around the tine holes. However, remember that a fine line exists between decompaction/aerating the surface and destabilising the surface during the winter months.

Although aeration is important during the season its use in the summer months is even more important, since aeration during the growing season will promote a deeper rooted sward more able to withstand the rigours of play during the winter months.

Use punch-action machines fitted with 8mm needle tines at regular intervals as determined by the frequency of matches, again being careful not to destabilise the surface, especially during the dormant winter months.

Verti-draining is the other main type of aeration that will need to be carried out throughout the year, as conditions allow. This work can be undertaken in house, if a machine is available, or by employing a competent contractor. Working depth and surface heave should be set to suit conditions and the tine spacing set at between 75mm to 100mm depending on the size of the tines to be used.

Mowing, Scarification/Verti-Cutting

MOWING

MOWING is obviously one of the most vital operations required on a regular basis serving several functions, all relating to the production of a healthy sward. Presentation is also much enhanced by correct mowing techniques.

It is an essential all the year round operation and the machine should be set at a suitable height to provide a relatively short, quick surface. Professional sport in any form is no longer played on slow over grassed pitches and as such mowing heights should be in keeping with the user's requirements.

SCARIFICATION/VERI-CUTTING

SCARIFICATION/VERTI-CUTTING will be of paramount importance if a clean open sward is to be maintained. These operations need to be carried out on a regular basis particularly during the growing season. They will also enhance presentation throughout the playing season and reduce the risk of organic build up and disease infestation, which can be costly to rectify.

Surface Hygiene

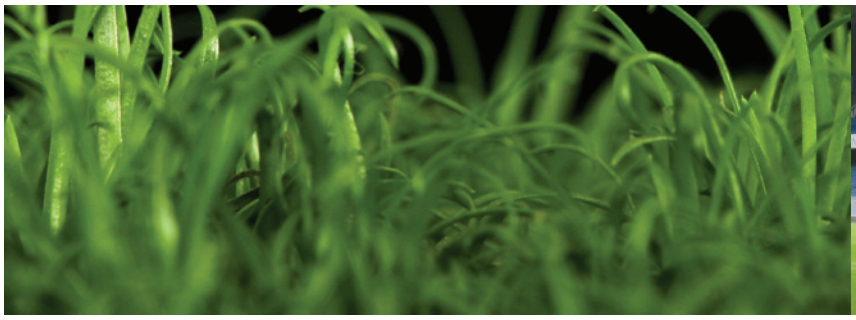
As mentioned earlier it is essential that the sward remains clean and open with no organic build up present. Good mowing practices along with scarification and Verti-cutting can be backed up with sweeping and collecting of any decaying matter, particularly after matches or any other events have taken place.

Do not fall into the trap of trying to produce a thick lush carpet which may look good during the autumn months but fails to live up to expectations during the depths of winter when it is vital that the playing surface is in as good condition as possible. A clean interface between the individual grass plants and the rootzone is essential if the pitch is to continue to drain and hold together during periods of dormancy of the grass plant.

Surface hygiene assists in the prevention of disease as the sward has more chance to develop healthy individual grass plants and is less prone to pathogens that cause disease in the first place. Surface accumulations of thatch and decaying material will also impede the passage of surface water through the **FIBRESAND®** reinforced rootzone to the drains below, causing deterioration in playing quality over a period of time.

The sward should be brushed, using pedestrian drag brushes, as a matter of routine to disperse morning dew and to stand the plants upright. The other form of brushing which will be required periodically should be done by means of a tractor mounted drag brush. This operation may be more beneficial if it is done, on occasions, contrary to the shaded panels on the pitch as it prevents the grass plants from laying flat in one direction.

General Maintenance, Nutrition & Lighting Rigs



GENERAL MAINTENANCE

During the course of the season and after matches the procedures that are normally adopted on any winter games pitch will be required. **FIBRESAND®** reinforced pitches if maintained correctly will not produce divots during play, they may however scar to some degree. Scarring is a necessary component of the system, as some give in the pitch is needed when players are sliding through with studded footwear. Scarring can be repaired as normal using hand forks to replace the damage. During this process it may be beneficial to incorporate a small amount of seed to help regeneration, even during the winter months. Although some of the seed will be lost, some will survive and germinate as conditions allow in milder periods over the winter and spring.

NUTRITION

If a soil or old rootzone pitch has been reconstructed with a high sand rootzone and a free draining surface exists, the nutritional requirements of the pitch will need to be monitored closely as leaching will occur at a more accelerated rate than that seen before. Visual and laboratory analysis will determine which type of fertiliser should be employed and at what time. Fertiliser/soil improvers may be applied in either the form of a granular top dressing, or as a liquid foliar feed and as such appropriate equipment will be necessary for the groundstaff to quickly react and balance the pitch's nutritional requirements as and when necessary.

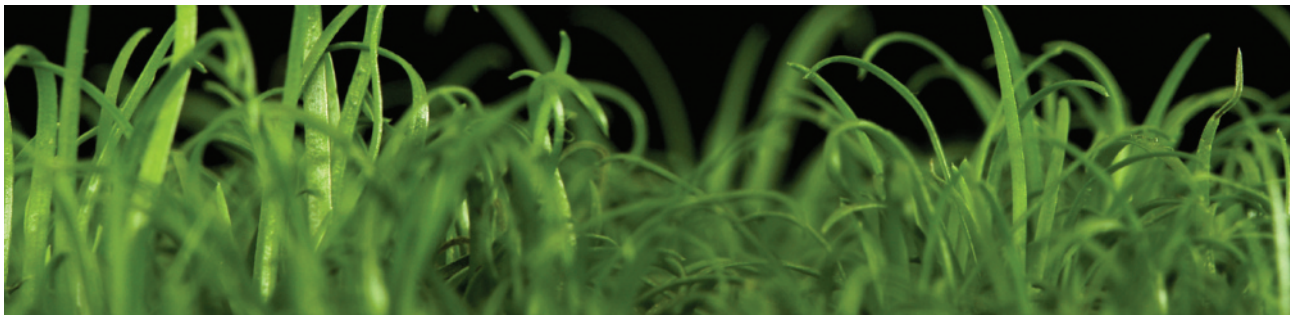
LIGHTING RIGS

In modern day stadia, shade problems are certainly a major point of concern and problems with sportsturf in such stadia can mostly be attributed to the way that they are built and used. Grass growth is reduced due to the fact that less light is getting to the plant, meaning the grass cannot grow fast enough to compensate for the wear caused by the use of the pitch.

Particularly during the winter months, with lower temperatures and light levels when the turf is dormant, there will be no natural recovery from the effects of wear, making it virtually impossible to keep the quality of pitch up to an acceptable standard.

In order to address this problem, it is strongly recommended that lighting rigs are available for use. The number of rigs will depend, of course, upon stadia budgets; however, it is considered very important indeed to be able to counteract at the very minimum the deleterious effects of almost permanent shade on certain parts of the pitch.

End of Season Renovation



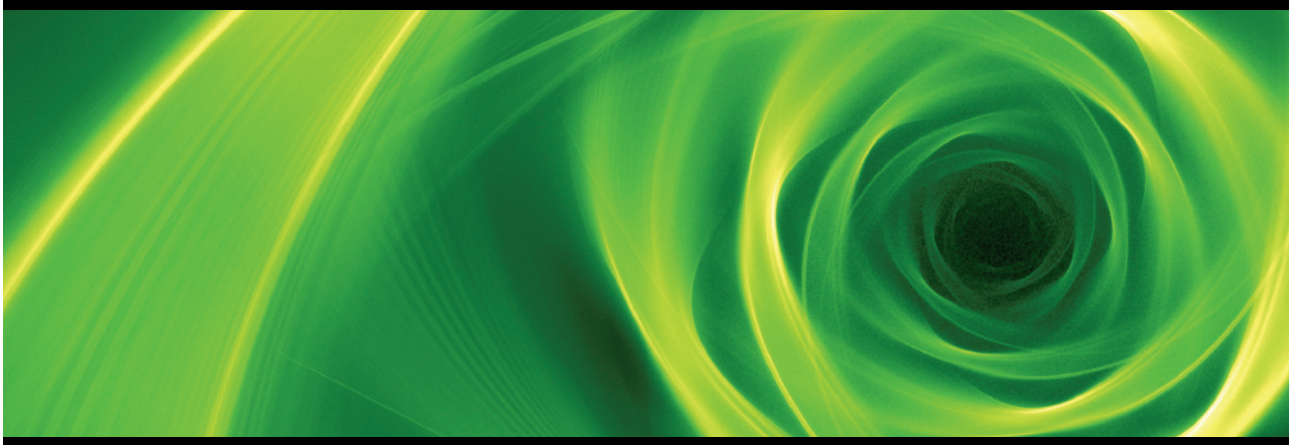
FIBRESAND® reinforced pitches are completely suited to modern day end of season renovation techniques. However, for this work to be undertaken correctly it will be necessary to employ the services of a competent contractor who has the relevant experience, expertise and machinery to carry out such work. End of season renovation should be determined by the condition of the pitch prior to termination of use and as such it should be assessed at the appropriate time.

In saying this, if the club is to receive the best value from the initial investment, we recommend the following procedures need to be budgeted for during the end of season renovation. These procedures are in keeping with modern management practices and are designed to prevent a gradual deterioration in surface condition. The essence of this type of end of season renovation is to minimise the amount of poa annua and associated thatch accumulations, which if not addressed could be the cause of many problems in the future.

Once the season has concluded, the pitch should be fraise mown using a IMANTS Field Top Maker. This machine will remove the top of the sward and any organic accumulations which may have occurred during the previous season. The action of the machine grubs out any shallow rooted poa annua whilst leaving the stronger perennial ryegrass intact. Some form of aeration will then be required which may be in the form of solid tining with a punch action aerator or by use of a verti-drain dependant on findings prior to the work beginning. Sterilised top dressing/silica sand should then be integrated into the existing rootzone profile. This will be followed by over-seeding using suitable cultivars of perennial ryegrass.

Dependant on usage and the stadium environment **FIBRESAND®** reinforced pitches should be re-cultivated either annually or periodically. This work serves to refresh the rootzone and open up air space within it thus reducing the occurrence of anaerobic conditions which may lead to reduced drainage rates and poor root growth. Prior to this process MANSFIELD SAND COMPANY can offer a service of sampling the rootzone profile for laboratory analysis. Advice will then be given if any new **FIBRESAND®** reinforced material is required and, if so, at what proportions in order to maintain the optimum levels for the season to come.

Notes



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