# MAINTENANCE SPECIFICATION AND SCHEDULE OF WORKS FOR PROPOSED SPORT ENGLAND TYPE 4 PITCH

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# MAINTENANCE SPECIFICATION AND SCHEDULE OF WORKS

## INTRODUCTION

This document provides an outline maintenance specification to assist with the grow-in and ongoing maintenance of Sport England Type 4 natural turf pitch.

The key is to ensure a high level of sward density and health and to develop the pitch/es to a stage where they will be ready for play and maintain grass cover during the winter and subsequent winters.

The fertiliser programme given is outline only and should be adjusted to suit ground and growing conditions. Soil analysis of the upper 100mm depth of topsoil/rootzone should be undertaken on the pitches on an annual basis, so that the maintenance and fertiliser programme may be adjusted accordingly.

The particle size distribution for the salt- and lime-free sand recommended for pitch top-dressing is presented in Appendix A. It should be noted that adequate annual top-dressing is vitally important to maintain the integrity of the natural turf pitch primary and secondary drainage systems installed.

Without regular sand top-dressing it is possible that the secondary drainage system could fail within one to two years following the start of use. The sand top-dressing programme should not be interrupted or discontinued unless the surface of the pitches becomes unstable.

It is recommended that a qualified and experienced sports turf agronomist is employed to assess the condition of the pitches and make recommendations for adjustments to the following maintenance plan and annual renovation works if required. Ideally the agronomist should visit pitches two to three times per year.

The outline ongoing maintenance programmes for the natural and hybrid turf are presented in Appendix B.

## NATURAL TURF PITCHES - OUTLINE PITCH MAINTENANCE SPECIFICATION

### ANNUAL MAINTENANCE

### 1. Cutting & Overseeding

1.1 The pitches should be maintained up to March with a height of cut of 35mm to 45mm. The sward should not be allowed to grow beyond 50mm between cuts. From April to October the height of cut should be lowered in stages of 3mm to 30 to 40 mm and should not be allowed to grow beyond 45mm. Following this and with the onset of winter the height of cut should be increased to 35 - 45mm.

1.2 If possible the cutting following establishment should be undertaken with cylinder mowers of either self-propelled or towed gang units. If possible clippings should be removed.

1.3 Cutting direction should be alternated through 90 degrees between each cut.

1.4 In early late Summer the pitches may need to be overseeded at a rate of 25g/$m^2$ using a disc seeder. If possible the seed mix should be Rigby Taylor R140 grass seed.

### 2. Aeration

2.1 Following grass establishment the pitches should be aerated with a verti-drain at least 3 time a year using 13 to 20 mm solid tines at a spacing of 100 x 100mm and to a **maximum** depth of 200mm.

2.2 If possible this should be supplemented with should surface aeration using a punch-action or drum roller aerator fitted with micro-tines. The use of a SISIS micro-tiner or Procore would be ideal in this instance. Slitting of the surface during spring and summer would acceptable in addition to verti-draining.

2.3 The aeration equipment should not be allowed to cause surface disruption or damage through wheel marking.

2.4 Operations should be suspended in conditions of inclement weather. The pitches should be in a suitable condition to accept the level of tine penetration as above but not too soft that the equipment causes surface disruption from wheel marks.

### 3.0 Weed and Fungal Disease Control

3.1 The need for weed control should be assessed prior to making the application.. It should be necessary to treat weed content on the pitches only when weeds have reached a level where they are directly impacting on a pitches capacity to remain usable year round or are posing a severe visual impact on the pitches causing them to be perceived as ‘un-maintained’.

3.2 Application should be using a low drift equipment and by a certified operator. A risk assessment and spray records should be undertaken. The local authority may need to be notified of the operation and the area closed and suitably signed during the operation and for the duration of any exclusion time.

3.3 Application should only be permitted in ideal conditions and once a threshold level of weeds identified. Application should only be made in conditions of weed growth and at time to prevent exposure to the users of the site and general public.

3.4 Spray with a fungicide if fungal disease becomes a problem. The spraying of herbicide and fungicides should be undertaken by a qualified specialist.

## 4.0 Divoting

4.1 Where possible divoting should take place after every game and training session. This should ideally be undertaken manually by hand forking the pitches surface and closing up scars. Loose grass should be removed by hand picking and or brushing.

## 5.0 Irrigation

5.1 Irrigation is recommended to maintain plant health. During spells of dry weather the pitches should ideally be irrigated to sustain grass growth especially on the slit drains and to prevent droughty soil and plant conditions and grass plant dormancy. If it is not possible to irrigate the pitches the early use of wetting agents (May onwards) should be considered to help moisture penetration and retention on the soil profile during the summer period. This will help to maintain grass cover on the pipe and slit drains.

5.2 The method of irrigation should not result in the compaction of the soil profile or disruption to the evenness of the surface. Implementation of effective irrigation is especially important for at least a four week period following the end of season renovation works.

5.3 Irrigating the pitch will also reduce the likelihood of drain line settlement and surface cracking. Irrigation will also help to reduce surface hardness of the pitches.

## 6.0 Drain Line Maintenance

6.1 The pipe drainage system should be inspected on a regular basis for grass cover and settlement. If settlement is occurring then the drain lines should be topped up on a regular basis. The drains should be topped up with no more than 4mm depth of sand. the sand used shall be salt and lime free. The grading curve of the top-dressing sand is given in Appendix A.

6.2 If the drain lines are not topped up on a regular basis then the amount of sand dressing required could be so great that it will smother and kill the grass. Therefore regular inspections and topping up if required is essential to the safety of the pitch

## 7.0 Gypflo Applications – Soil Structure Improvement

7.1 If required in order to improve soil structure it is recommended that two applications of Gyp Flo liquid gypsum are applied annual. Ideally the applications should be made during May and early September.

## 8.0 Seaweed Applications – Soil Structure Improvement

8.1 If required in order to improve soil structure it is recommended that two applications of granular seaweed are made annual. Ideally the applications should be made during early June and late July.

## Annual Fertiliser Applications

Due to the application of sand to the topsoil and the installation of intensive drainage systems it is anticipated that the level of fertiliser input will be relatively high. It is difficult to estimate the precise application requirements and so the schedule below is only a guide. An additional fertiliser application should been included if deemed necessary. Soil samples should be taken for pH, phosphorus, potassium, calcium and magnesium on an annual basis.

Note: It will be imperative to understand when using cheaper grade Urea- or Sulphate-based fertiliser that they must be applied during or immediately prior to rain events to ensure, as much as possible, they are washed in. Where Urea- or Sulphate-based fertilisers are applied directly to the surface and not washed in it is likely that burn of the leaves will occur. In addition, accurate application will be essential to avoid over- application on overlaps.

## 9.0 Summer Fertiliser Applications

9.1 The first summer fertiliser application should be a 10:15:10 N:P:K granular feed applied at a rate of 35g/$m^2$. The fertiliser should have no greater than 10% nitrogen content. Phosphorus should be no greater than 15% and potassium 10%. Iron and magnesium may be within the formulation. If required, apply this fertiliser to the embankments

9.2 The equipment for application should be accurately calibrated and suitable to apply a uniform application. No damage from wheel markings should be permitted.

## 10.0 Autumn Fertiliser Applications

10.1 In early Autumn apply an autumn fertiliser of no greater than 4% Nitrogen content at a rate of 35g/$m^2$. Phosphorus should be no greater than 12% and potassium 12%. Iron and Magnesium may be within the formulation.

10.2 The equipment for application should be accurately calibrated and suitable to apply a uniform application. No damage from wheel markings should be permitted.

10.3 Fertiliser application should occur during late September and again in early November with a low nitrogen formulation. Cutting should not follow within two days. Ideally, fertilisation should occur prior to a forecasted period of rainfall.

## 11.0 Spring Fertiliser Applications

11.1 In early Spring an amenity fertiliser of no greater than 9% nitrogen content should be applied at a rate of 35g/$m^2$. Phosphorus should be no greater than 7% and potassium 7%. Iron and Magnesium may be within the formulation.

11.2 Approximately five weeks following this, fertiliser of no greater than 10% nitrogen content should be applied at a rate of 35g/$m^2$. Phosphorus should be no greater than 15% and potassium 10%. Iron and magnesium may be within the formulation.

11.3 The equipment for application should be accurately calibrated and suitable to apply a uniform application. No damage from wheel markings should be permitted.

11.4 Cutting should not follow within two days. Ideally, fertilisation should occur prior to a forecasted period of rainfall.

## SPRING/SUMMER RENOVATIONS

### 12.0 Scarification

12.1 From May/June if required the pitches should be scarified to remove any thatch accumulation.

12.2 The maximum depth of scarification should be no more than 5mm into the turf surface.

### 13.0 Sand Band Installation

13.1 If required every one to three years Blec Sandmaster sand bands could be installed at right angles to the pipe drainage system. The frequency of installation will depend on levels of use and maintenance practise. The sand used for sand band installation should be salt and lime free and have a texture complaint with the grading curve detailed in Appendix A.

### 14.0 Top-dressing

14.1 The pitches should be top-dressed with salt- and lime-free medium fine sports turf sand. The grading curve of the top-dressing sand is given in Appendix A.

14.2 The dressings should be applied in a uniform 4mm deep layer from specialist top dressing equipment. The amount of top-dressing sand applied may need to be reduced if sand bands are installed as this can result in sand being left on the pitch surfaces. It is strongly recommended that additional sand top-dressing is made in early autumn at 3mm depth. Ideally top-dressing should be undertaken following verti-draining of the pitches.

14.3 Any drain lines showing subsidence should be top dressed level with a suitable rootzone or medium/fine sand.

### 15.0 Brushing and Levelling

15.1 The pitches should be brushed and levelled using a lute to work the top dressing into the tine holes if verti-draining has taken place.

15.2 The finished surface should be level to within 10mm deviation along a 3m straight edge.

15.3 The equipment used should be designed to cause minimal surface damage.

### 16.0 Over-seeding

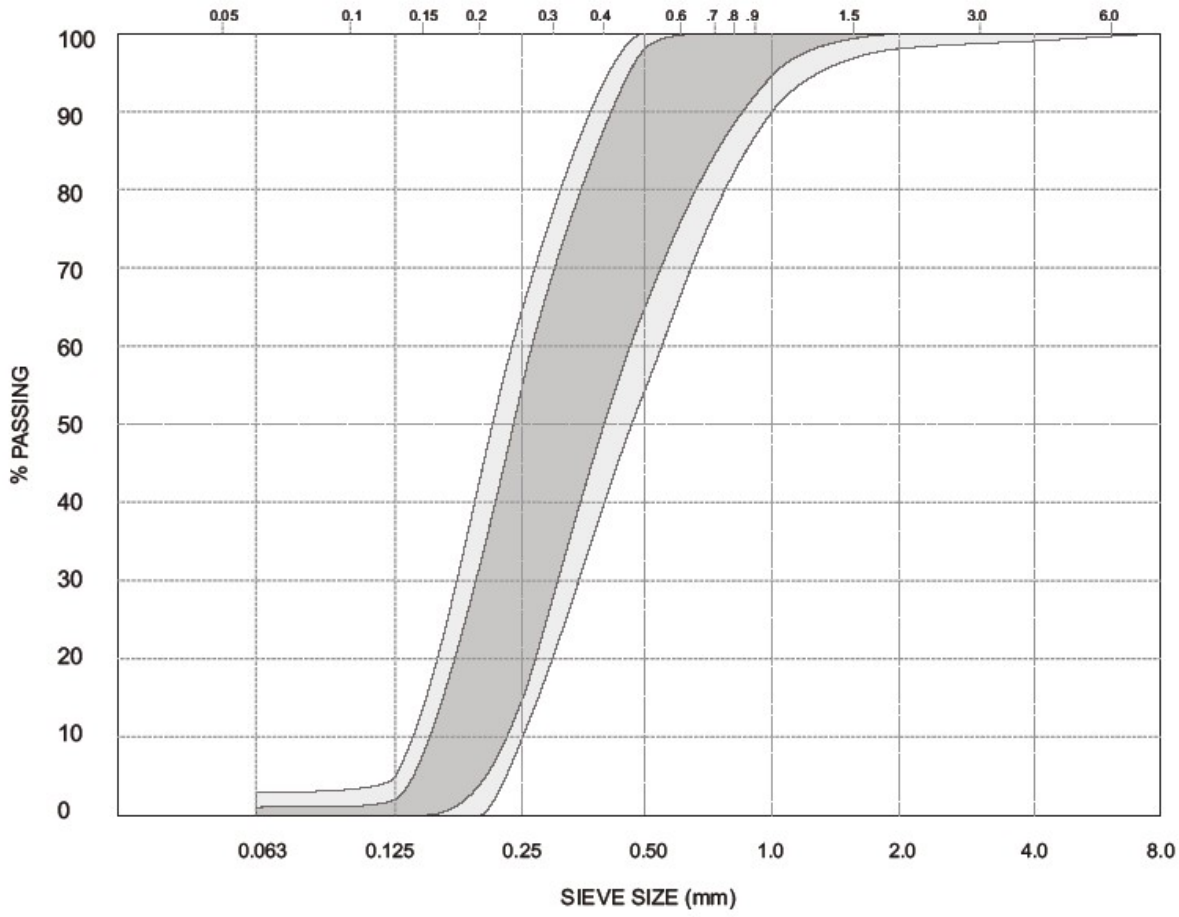
16.1 The pitches should be overseeded at a rate of 25g/$m^2$ using a disc seeder if possible. The seed mix should be if possible Rigby Taylor R140 or similar .

### 17.0 Fertiliser Application

17.1 A spring fertiliser of no greater than 10% nitrogen content should be applied at a rate of 35g/$m^2$. Phosphorus should be no greater than 15% and potassium 10%. Iron and magnesium may be within the formulation.

17.2 The equipment for application should be accurately calibrated and suitable to apply a uniform application. No damage from wheel markings should be permitted.

## Appendix A – Top-dressing & Sand Band Sand Grading Curve



## Appendix B – Schedule of Maintenance Works For Natural Turf Pitches

**Schedule of Maintenance Works**

## NATURAL TURF PITCHES ONGOING

### Natural Turf Pitch Maintenance Programme

| | January | | | | | February | | | | March | | | | April | | | | May | | | | | June | | | | July | | | | August | | | | | September | | | | October | | | | | November | | | | December | | | | 2020 + |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week Number** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | |
| **Key Stage Tasks** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mowing 35 -45mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mowing 30 -40mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Overseed 25Kg/m² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Topdressing - Medium Fine Sand - 4mm Depth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apply Wetting Agent | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topdressing - Medium Fine Sand - 3mm Depth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Granular Seaweed Applications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aeration - Vertidrain If Ground Conditions Suitable - Minimum 3 treatments shown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spiking /slitting | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monitor and top up / overseed drain lines as required | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weed control - Selective Herbicide Application if Required | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| Fertiliser at 35g/m² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9:7:7 (N:P:K) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10:15:10 (N:P:K) | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4:12:12 (N:P:K) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scarification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disease Control As Required | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Divoting | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brushing & Cleaning - Leaf Removal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Notes**

X - Only if required

Timing depends on end of football season and when pitches available for renovation

All works shown are indicative and subject to weather, turf and site conditions.

Fertiliser applications and rates shown are indicative and subject to turf, weather and site conditions. Specialist amenity products to be used.