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BSI Standards Publication

Surfaces for sports areas — Synthetic turf sports facilities — Guidance on how to minimize infill dispersion into the environment

bsi.

National foreword

This Published Document is the UK implementation of CEN/TR 17519:2020.

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Surfaces for sports areas - Synthetic turf sports facilities - Guidance on how to minimize infill dispersion into the environment

Sols sportifs - Installations sportives en gazon synthétique - Recommandations pour limiter la dispersion des matériaux de remplissage dans l'environnement

Sportböden - Kunststoffrasenflächen - Leitfaden zur Minimierung des Austrags von Verfüllgut in die Umgebung

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Contents

Page

European foreword

This document (CEN/TR 17519:2020) has been prepared by Technical Committee CEN/TC 217 “Surfaces for sports areas”, the secretariat of which is held by AFNOR.

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Introduction

General

Synthetic turf sports surfaces provide attractive, hard–wearing and safe playing areas that can accommodate high levels of use and be used in far more diverse climates than natural turf. The development of these surfaces has led to significant demand with over 16 000 full size sports fields now being used in Europe, and approximately 4 000 new fields being built each year.

Synthetic turf sports surfaces take four generic forms:

— non-filled short pile;

— sand filled or sand dressed short pile;

— long pile with infill (typically rubber and/or sand);

— long pile non-filled.

Infill is applied to the synthetic turf surfaces for three reasons:

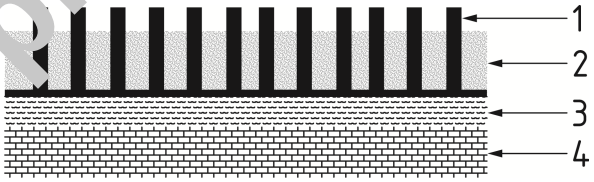
— it is used to stabilize the carpet to prevent dimensional expansion and contraction and movement through use i.e. it acts as a ballast. This type of infill is often described as stabilizing infill;

— it contributes or provides the sports performance and impact attenuation characteristics of the sports surface. This type of infill is often described as performance infill. The performance infill is a key component of the surface as it provides comfort and protection to players as they run and fall on the surface;

— it helps control the way the ball interacts with the surface, supporting the pile of the surface so it remains upright.

Short pile synthetic turf surfaces typically have pile heights of between 10 mm and 30 mm and normally only have one layer of infill. This is often a rounded sand. Sometimes the sand has a polymeric coating to change the colour of the infill (i.e. it is coloured to match the synthetic turf colour).

Figure 1 shows the typical cross section of a short pile synthetic turf sports surface.



Key

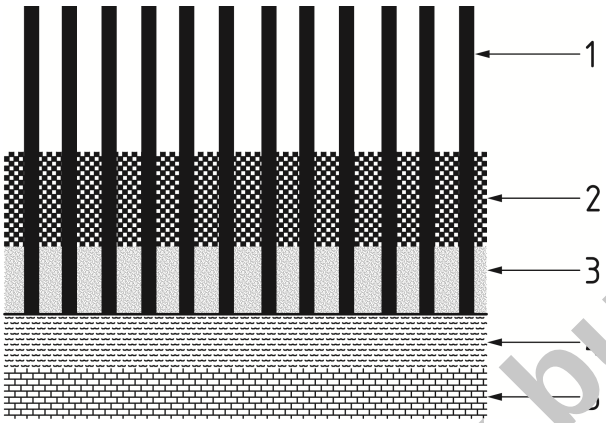
1 synthetic turf carpet pile, may be curly
2 infill
3 shockpad (optional depending on intended sports use)
4 base (or foundation)

Figure 1 — Typical cross section of short pile synthetic turf surface

Long pile synthetic turf surfaces typically have pile heights of between 30 mm and 60mm. Most contain two layers of infill, the lower layer (normally sand) is installed to provide ballast and stability to prevent the synthetic turf carpet moving. The upper layer is the performance infill.

There are a number of different granulated materials used to form this layer including various rubbers and thermo-plastics and natural materials such as cork, timber, nut husks, etc.

Figure 2 shows the typical cross section of a long pile synthetic turf sports surface.



Key

1 synthetic turf carpet pile, might be curly
2 performance infill
3 stabilizing infill
4 shockpad (optional)
5 base (or foundation)

Figure 2 — Typical cross section of long pile synthetic turf surface

Most infills are in the particle size range 0,5 mm to 2,5 mm with some occasionally being larger.

Environmental concerns

Increasing public concern about microplastics has led the European Commission, to investigate ways of reducing the quantities released into the environment. They have defined a microplastic as any solid particle made of a non-biodegradable polymer that is 5,0 mm or less in size. They can be unintentionally formed through wear and tear or deliberately manufactured and intentionally added to products for a specific purpose.

As many infill materials used within synthetic turf sports surfaces are either made from non-bio-degradable polymers that are less than 5,0 mm in size, or incorporate some form granule (e.g. sand) that has a polymeric coating, it is important that the design and maintenance of sports fields having these infills is undertaken in a way that minimizes the possibility of the infill migrating from the sports surface and being dispersed into the environment. This document describes ways of containing infill materials within the footprint of the synthetic turf field during its construction, operation and end of life removal.

1 Scope

This document describes ways of containing infill materials used in many types of synthetic turf sports fields within the confines of the sports field, so they are not dispersed into the surrounding environment.

The options described are based on examples of best practice identified by members of CEN/TC 217.

This document is intended to be of practical use, to create awareness amongst field designers, venue owners, installation companies and those maintaining synthetic turf sports fields. It is applicable for all forms of synthetic turf sports field, from those used for community activities to those used by professional and elite level athletes.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp/ui
- IEC Electropedia: available at http://www.electropedia.org/

3.1
synthetic turf surfacing system
all components of the surface that influence its sports performance or bio-mechanical characteristics including the synthetic turf carpet, infill and shockpad

3.2
filled synthetic turf
synthetic turf surface, whose pile is either totally filled or partly filled with an unbound particulate material

3.3
infill
particulate materials used within the synthetic turf surface to provide support to the carpet pile and to aid the provision of the required performance characteristics of the surface

3.4
performance infill
granulated materials used to form the upper layer of infill that help provide the required sports performance and player welfare characteristics of the surface

3.5
polymeric infill
granular infill material formed from non-biodegradable rubbers or plastics, or an infill material that has a coating formed from non-biodegradable rubbers or plastics (e.g. coated sand)