SLOVENSKI STANDARD
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Podloge za športne dejavnosti - Pravila za vzorčenje polnil, ki se uporabljajo za umetne travnate podloge

Surfaces for sports areas - Code of practice for the sampling of performance infills used within synthetic turf surfaces

Sportböden - Regeln für die Probenahme bei Füllungen, die in Kunstrasenflächen verwendet werden

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Surfaces for sports areas - Code of practice for the sampling of performance infills used within synthetic turf surfaces

Sportböden - Regeln für die Probenahme bei Füllungen, die in Kunstrasenflächen verwendet werden

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword

This document (prEN 17409:2019) has been prepared by Technical Committee CEN/TC 217 “Surfaces for sports areas”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

1 Scope

This document describes the minimum procedures for the sampling of performance infills used within synthetic turf surfaces to verify compliance with toxicology, environmental and performance regulations and standards.

Four sampling procedures are specified:

Method 1 is intended based on taking samples during production of the infill material.

Method 2 describes how to take samples from big bags.

Method 3 describes how to take samples from small bags.

Method 4 describes a procedure for taking samples from a synthetic turf (e.g. sports, recreational or landscaping surface).

The procedures described are suitable for all forms of infill.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15980:2011, *Air quality - Determination of the deposition of benz[a]anthracene, benzo[b]fluoranthene, benzo[j]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, dibenz[a,h]anthracene and indeno[1,2,3-cd]pyrene*

EN 15841:2009, *Ambient air quality - Standard method for determination of arsenic, cadmium, lead and nickel in atmospheric deposition*

EN 15853:2010, *Ambient air quality - Standard method for the determination of mercury deposition*

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:

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

3.1
big bag
flexible container capable of holding ≥ 1 m^3 (1 000 l) or more of infill

3.2
field sample
sample taken in the field and from which laboratory samples are produced

3.3
increment
sub-portion of material extracted in a single operation by the sampling device

3.4
infill
particulate materials used to infill the synthetic turf pile to provide support of the carpet pile and to aid the provision of the required performance characteristics of the surface

3.5
laboratory sample
sample or sub-sample sent to or received by the laboratory

3.6
lot
defined quantity of infill material for which a characteristic is to be determined

3.7
sample
mix of all the increments taken from a lot

3.8
sampling tool
tool used to remove a quantity of material, greater than or equal to 0,000 3 m^3 (0,3 L), from different heights within a big bag

3.9
small-bag
flexible container capable typically holding 0,05 m^3 (50 L) of infill

3.10
test portion
quantity or volume of infill removed from the test sample for analysis purposes

3.11
test sample
prepared from the laboratory sample, from which the test portions are removed for testing or for analysis

4 General

The method of sampling employed shall be designed and controlled to ensure that contamination of the increment, lot, sample, test portion or test sample cannot occur.

When laboratory samples are being taken for chemical analysis increments and samples shall be stored in containers that are known to not influence the results of the analysis.

NOTE Metal or glass containers are considered to satisfy this requirement.

All equipment shall be thoroughly cleaned before use.

5 Method 1 — Sampling during production

5.1 Sampling plan

The main principle of sampling is to obtain a representative sample(s) from a lot of material from which a characteristic is to be determined. If the lot is to be represented by a sample, then every particle in the lot shall have an equal probability of being included in the sample. When these principles cannot be applied in practice, the sampler shall define a procedure as close as possible to probabilistic sampling in

their judgement (i.e. judgemental sampling) and note the limitations in the sampling plan and sampling report.

Obtaining samples that are truly representative of the material produced is easier when the material is moving (for example on a conveyor belt). Therefore, sampling from falling material shall be preferred wherever possible.

A sampling plan shall be prepared before samples are taken through a specific definition of the lot size and the size and number of increments to be taken.

5.2 Lot size

The minimum lot size shall be 10 t and the maximum lot size shall not exceed 120 t of product.

NOTE 1 A lot size of 120 t is based on the typical quantity of infill used on a 60 mm full size synthetic turf football field.

When determined by the producer the lot size may be defined as:

a) a fixed quantity produced between machine settings;

b) a fixed quantity in a production day/shift;

c) a fixed quantity;

d) a quantity produced in a fixed time frame.

NOTE 2 Option d) is most appropriate for continuous production with no beginning and no end.

5.3 Sampling point and apparatus

Based on health and safety assessments and producer equipment, a fixed sampling point for the collection of sample increments shall be chosen for each material fraction to be monitored. Sampling shall be carried out using a sample box or other suitable equipment.

The sampling box is passed through the stream of falling material so that it uniformly cuts the full flow of falling material. The box shall be large enough so that it does not become overloaded. Automatic systems fulfilling these criteria may also be used.

NOTE A procedure for preparing samples for chemical analysis is given in Annex A.

5.4 Size of sample increment

The sampling box shall have a capacity of not less than 0,5 dm^3.

The sampling operator shall record the approximate capacity of the sampling device in cubic decimetres.

5.5 Number of increments

One increment shall be taken per 10 t of produced infill, with a minimum of four increments per lot.

Where daily or weekly production quantities are small, the taking of increments should be increased to ensure the lot comprises at least four increments.

6 Method 2 – sampling from big bags

6.1 Principle

The laboratory sample is created by mixing several increments removed with a sampling tool at least at three levels and at least at one location on each level, as specified in 6.3.

6.2 Apparatus

6.2.1 Sampling tool

This tool shall be designed to take samples of dry or wet materials, slightly cohesive. It shall be shaped in such a way to allow the operator to reach different heights by simply screwing the tool into the big bag. Its opening shall be wider than three times the size of the largest particle expected to be present in the big bag.

6.2.2 Measuring flask

Container of known volume; greater than 1 l (0,001 m^3).

6.2.3 Container

Containers shall be used to recover the increments.

6.3 Procedure

6.3.1 Sampling

Using the sampling rod take, at least, three increments at different heights in accordance with 6.3.2 within the big bag as follows:

1. Close the container on the sampling rod (see Figure 1):

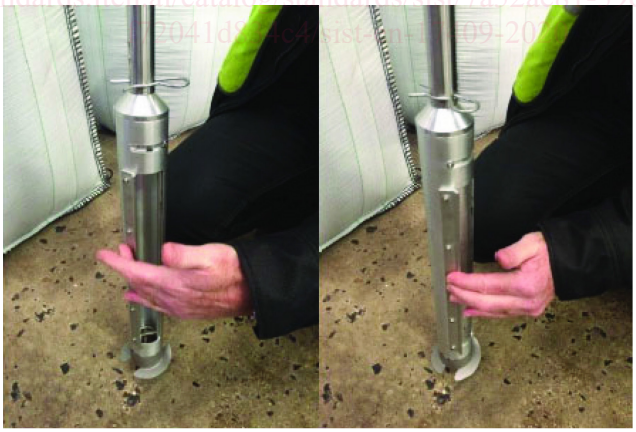

Figure 1 — Sampling rod

2. Insert the sampling rod into the big bag and twist in a clockwise direction from the top of the big bag (see Figure 2):

Figure 2 — Rotating sampling rod in big bag

3. When the sampling depth has been reached, open the sampling container by turning the sampling rod in the opposite direction;

4. Make three full rotations in the same direction to fill the container;

5. Pull out the sampling rod and empty into the sampling container;

6. Repeat procedure to collect increments in the middle of the big bag, and then at the bottom of the big bag; and

7. Merge the three increments accordance with Clause 9.

6.3.2 Sampling heights

Take increments from different heights. At least three increments shall be taken at different heights:

- P1: At the top (20 cm from the surface)
- P2: In the middle
- P3: At the bottom of the big bag (approximately 20 cm from the bottom)

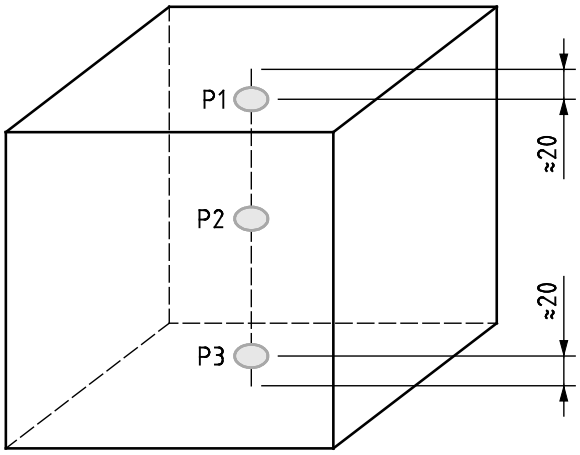

Figure 3 —Position of increments for three portions

If it is not possible to take increments in the centre axis of big bag (see Figure 3) then six increments shall be taken, on two opposite side of the big bag at different heights (see Figure 4),