BS EN 12229:2014

BSI Standards Publication

Surfaces for sports areas — Procedure for the preparation of synthetic turf and needle-punch test pieces

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National foreword

This British Standard is the UK implementation of EN 12229:2014. It supersedes BS EN 12229:2007 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/57, Surfaces for sports areas.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Surfaces for sports areas - Procedure for the preparation of synthetic turf and needle-punch test pieces

Sols sportifs - Méthode de préparation d'éprouvettes en textile aiguilleté et en gazon synthétique

Sportböden - Verfahren zur Herstellung von Probekörpern aus Kunststoffrasen und textilen Belägen

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Contents

Page

Foreword **3**

1 Scope **4**

2 Terms and definitions **4**

3 Preparation of test pieces **4**

4 Test report **8**

Foreword

This document (EN 12229:2014) has been prepared by Technical Committee CEN/TC 217 “Surfaces for sports areas”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12229:2007.

In comparison with the previous edition, the test method has been revised to more precisely define the design of the studded roller used within the test equipment. In particular, the positioning of the studs on the conditioning roller is now precisely specified.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies a procedure for the preparation of test pieces of synthetic turf and needle-punch sports surfaces.

2 Terms and definitions

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

2.1
surfacing
top layer, or layers, including any shock pad or other shock absorbing or load spreading layers, which directly provide the sports performance and biomechanical response qualities

2.2
supporting layer(s)
main structural layer or layers which support the surfacing and which can influence its sports performance and biomechanical response qualities

Note 1 to entry: Supporting layers can be composed of granular material with a binding agent to produce a cohesive layer or unbound granular material.

2.3
sample
surfacing and supporting layers from which test pieces are taken

2.4
test piece
representative specimen of the surfacing and any supporting layers, if required

3 Preparation of test pieces

3.1 Test pieces, with dimensions as specified in the appropriate test method, shall be cut from a sample of surfacing. Test pieces shall not be taken within 100 mm of any edge of a sample or its constituent parts. Test pieces shall be taken in an even distribution across the sample.

3.2 For tests in which the characteristics being measured are influenced by the supporting layers, as detailed in the appropriate test method, the surfacing shall be laid on supporting layers of equivalent materials and construction to that used on an installation. The supporting layers of the test piece shall be prepared in accordance with the instructions provided by the manufacturer or supplier.

When preparing the supporting layers, take care to ensure that the depth and consolidation of materials simulates the conditions obtained during the installation of the product.

If laboratory test pieces incorporating the supporting layers are being prepared in containers, take care to ensure that the design of the container does not influence the test results.

3.3 The surfacing shall be laid free of creases and with minimal disturbance or damage onto the supporting layers.

Record in the test report any creases or defects resulting from the manufacturing of the surfacing.

Reject the surfacing if it has any defects resulting from storage or transportation.

3.4 If the carpet pile is filled with the same filler material throughout its depth, the mass of filling material specified by the manufacturer or supplier, appropriate to the size of the sample, shall be taken and divided into three equal portions. One third shall be uniformly spread onto the surfacing working it into the pile with a stiff brush. This operation shall be repeated twice more until all filler is applied. Take care to ensure that applying the filler material does not flatten or trap the pile of the surfacing.

3.5 If different types of filler material are incorporated into the pile, the manufacturer's instructions for preparing the surface shall be followed as closely as possible. If specified, this may include consolidation of the infill by means of a conditioning roller (see below) or other means. The same conditioning procedure shall be used on all test specimens being prepared for any one product. Take care to ensure that applying the filler material does not flatten or trap the pile of the surfacing.

3.6 Following filling, filled test specimens shall be conditioned prior to test by passing a hand-pulled roller over the test specimen for 50 cycles (one cycle comprises one outward and one return path of one roller). The barrel of the roller shall weigh (28,5 ± 0,5) kg, be (118 ± 5) mm in diameter and have plastic studs mounted as shown in Figure 1 and detailed in Table 1. The studs shall be as shown in Figure 2, be manufactured from plastic and have a Shore A hardness of 96 ± 2.

Note a manufacturing tolerance of ± 1 mm for the stud positions has been found satisfactory.

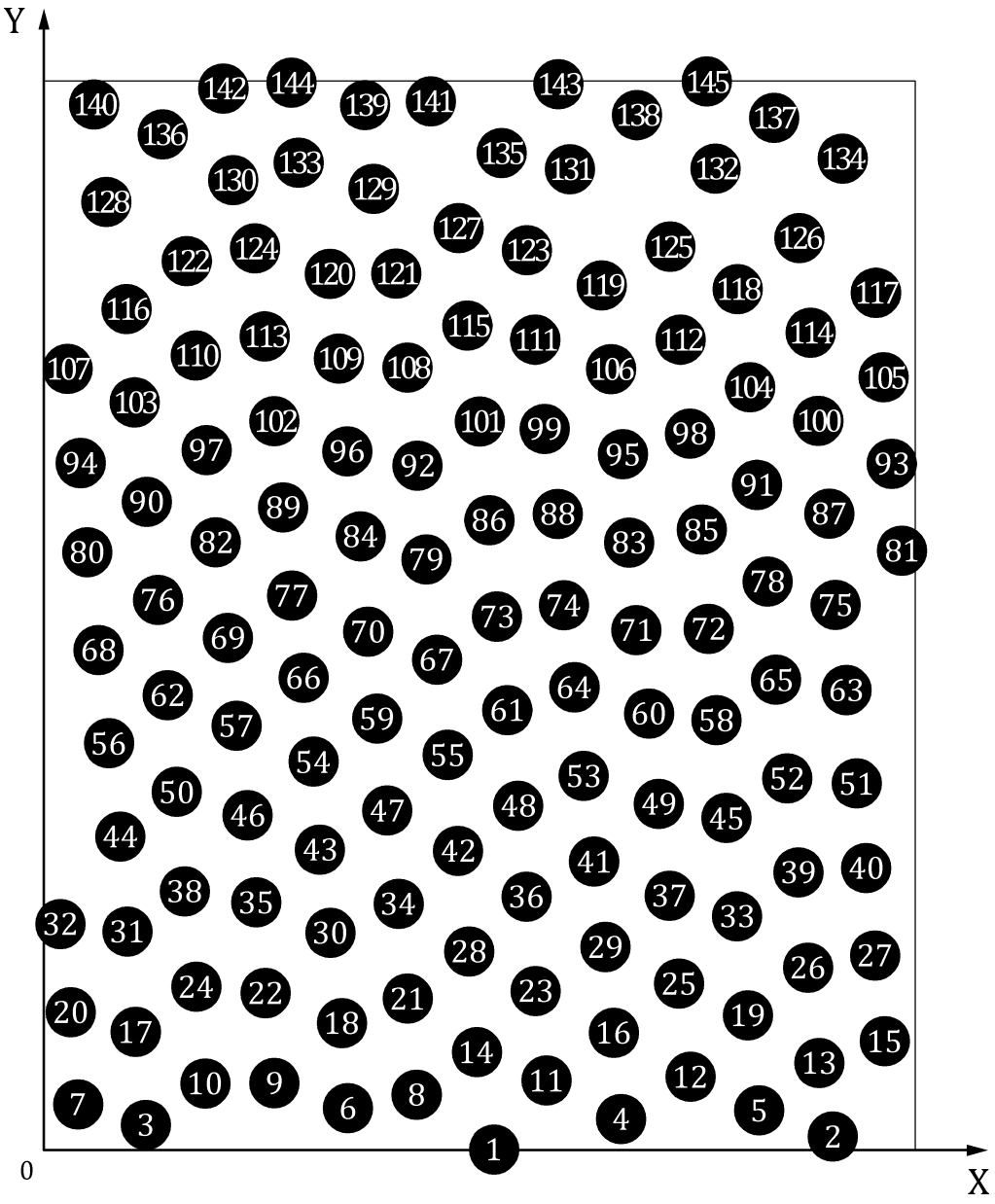

Figure 1 — Pattern of studs

Table 1 — Coordinates of stud positions (centre of stud)

STUD	X AXIS mm	Y AXIS mm	STUD	X AXIS mm	Y AXIS mm	STUD	X AXIS mm	Y AXIS mm
1	154,5	0,0	51	279,5	127,5	101	150,0	252,5
2	271,5	4,5	52	255,5	128,5	102	78,5	252,5
3	35,0	8,5	53	185,5	129,5	103	31,0	259,0
4	198,5	10,5	54	92,5	134,5	104	242,5	264,5
5	246,0	13,5	55	139,0	136,5	105	289,0	268,0
6	105,0	14,0	56	22,0	141,0	106	195,0	270,5
7	11,5	16,0	57	65,5	146,5	107	7,5	271,0
8	128,5	19,0	58	231,5	149,0	108	125,0	271,0
9	79,0	23,0	59	114,5	149,5	109	101,0	274,5
10	55,0	23,0	60	208,0	151,0	110	51,5	275,5
11	173,0	24,0	61	159,5	152,5	111	169,5	280,5
12	222,0	25,0	62	42,0	157,5	112	219,0	280,5
13	267,0	30,0	63	276,0	158,5	113	76,0	282,0
14	149,0	33,5	64	182,5	160,0	114	263,5	284,0
15	289,5	37,0	65	252,5	162,5	115	145,5	285,0
16	196,0	40,0	66	89,0	164,0	116	28,0	291,5
17	31,0	41,0	67	135,0	170,0	117	286,0	297,0
18	102,0	43,5	68	18,5	173,0	118	239,0	298,5
19	242,0	46,0	69	63,0	177,5	119	192,0	300,0
20	8,5	47,0	70	111,0	179,5	120	98,0	304,0
21	125,0	52,5	71	204,5	180,0	121	121,0	304,0
22	76,0	54,0	72	229,0	180,5	122	48,5	308,0
23	169,0	55,0	73	155,5	184,5	123	166,0	312,0
24	52,0	56,0	74	178,5	188,5	124	72,0	312,5
25	218,5	57,5	75	272,5	189,0	125	215,0	313,5
26	263,0	63,0	76	38,5	190,5	126	260,0	316,0
27	286,0	67,0	77	85,0	192,5	127	142,0	319,5
28	146,0	68,5	78	249,0	196,5	128	21,0	329,0
29	193,0	70,5	79	131,5	204,5	129	113,0	333,0
30	98,5	75,0	80	14,5	207,0	130	64,5	336,0
31	28,0	75,5	81	294,5	208,0	131	180,0	340,0
32	5,5	78,0	82	58,5	210,5	132	231,0	340,0
33	239,0	81,0	83	201,0	210,5	133	87,0	342,5
34	122,0	85,0	84	108,5	212,5	134	275,0	343,5
35	73,0	85,5	85	226,0	215,0	135	157,5	345,5
36	166,0	88,0	86	153,0	218,0	136	40,0	352,0
37	215,0	88,0	87	270,0	220,0	137	251,0	357,5
38	48,5	89,5	88	176,5	220,5	138	204,0	358,5
39	259,5	96,0	89	82,0	222,5	139	110,0	362,5
40	283,0	97,5	90	34,5	224,5	140	16,5	362,5
41	189,0	100,0	91	246,0	231,0	141	133,0	363,5
42	142,0	103,0	92	128,5	237,5	142	61,0	368,0
43	94,5	104,0	93	292,0	237,5	143	177,5	369,0
44	25,5	109,0	94	12,0	238,5	144	84,5	370,0
45	235,0	114,5	95	199,0	241,0	145	228,0	370,0
46	69,5	116,0	96	104,0	242,0			
47	118,5	117,5	97	55,,0	243,0			
48	162,5	119,5	98	222,0	248,0			
49	211,5	119,5	99	172,5	250,0			
50	46,0	123,5	100	266,5	252,5			

Dimensions in millimetres

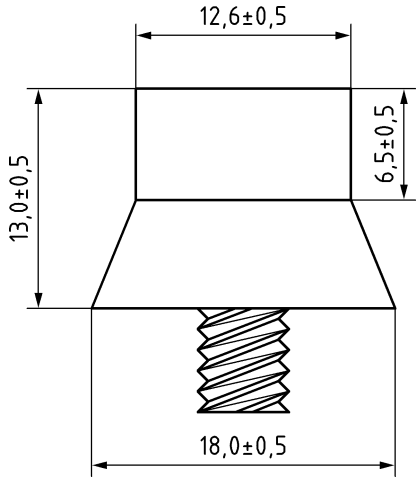

Figure 2 — Stud profile

3.7 Following conditioning, the surface of the carpet shall be brushed in two directions at 90° to each other with a stiff brush to lift the pile before testing.

4 Test report

If information on the method of sample preparation is reported, it shall include the following:

a) number and date of this European Standard, i.e. EN 12229:2014;

b) complete identification of the surfacing, including type and manufacturer's reference;

c) materials from which and the method in which the supporting layers of the test piece were constructed, if applicable;

d) type and method of particulate filling;

e) any damage or defects in the test piece;

f) thickness and height of each infill layer;

g) number of conditioning cycles undertaken.

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