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English version

Surfaces for sports areas

Procedure for accelerated ageing by exposure to hot air

Sols sportifs – Méthode de vieillissement accéléré par exposition à l'air chaud

Sportböden – Verfahren der beschleunigten Alterung durch Beanspruchung mit heißer Luft

This European Standard was approved by CEN on 2004-07-29.

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CEN

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Foreword

This document (EN 13817:2004) has been prepared by Technical Committee CEN/TC 217 "Surfaces for sports areas", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2005, and conflicting national standards shall be withdrawn at the latest by April 2005.

It is one of two standards for procedures for ageing surfaces for sports areas. The other standard in this series has the following title:

EN 13744, *Surfaces for sports areas — Procedures for accelerated ageing by immersion in hot water*

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

1 Scope

This document describes a procedure for subjecting test pieces taken from surfaces for sports areas to accelerated ageing by exposure to hot air in the laboratory. Test pieces are aged to permit a comparison of their physical characteristics before and after ageing in accordance with European Standard test methods for surfaces for sports areas.

This method is suitable for ageing all types of sports surfaces, except for wooden surfaces, using test pieces in the laboratory, but is primarily intended for ageing polymeric surfaces. The procedure allows a measure of the effect on the physical characteristics of the sports surface due to exposure to hot air to be made.

NOTE Results on materials which exhibit temporary changes in properties due to drying should be interpreted with caution.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 188:1998, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

3 Principle

Test pieces are exposed to air at an elevated temperature to permit selected physical characteristics of the surface to be assessed before and after test.

4 Apparatus

4.1 Air circulating oven, as described in ISO 188:1998, 3.2.2.

5 Test pieces

Select, prepare and condition the test piece(s) in accordance with the appropriate method of test.

Test pieces shall be such that no mechanical, chemical or heat treatment will be required after their removal from the oven.

Any material used for marking test pieces shall not be applied in any critical area of the test piece and shall not damage the surface or be destroyed during ageing.

NOTE Wherever possible, marking should be carried out after ageing of the test piece.

6 Procedure

Place the test pieces in the oven (4.1) after it has been pre-heated to a temperature of (70 ± 2) °C. The test pieces shall be stationary, free from strain and freely exposed to air on all sides and not exposed to light.

Leave the test pieces in the oven for (336 ± 2) h.

Remove the test pieces from the oven and condition them together with an un-aged sample for not less than 16 h and for no more than 6 d in a relaxed condition in accordance with the test method for the particular characteristic being assessed.

NOTE Simultaneous ageing of different test pieces in the same oven should be avoided, to prevent migration of anti-degradants or plasticizers, etc.

7 Comparison tests

To compare properties before and after accelerated ageing, carry out tests on un-aged test pieces at the same time and under the same conditions as those on test pieces having been subjected to accelerated ageing. Only compare test pieces of similar dimensions and having approximately the same exposed areas.

8 Calculation and expression of results

Calculate the results as specified by the appropriate method of test. If required, calculate the percentage change in the property using the following expression:

$$C = \frac{A - O}{O} \times 100$$

where

- C* is the percentage change in the property;
- A* is the aged value of the property, e.g. % impact absorption;
- O* is the un-aged value of the property.

9 Test report

The test report shall include the following:

- a) reference to this document, i.e. EN 13817:2004;
- b) reference to the procedure used to select the test pieces and determine their characteristics, e.g. a European Standard test method;
- c) complete identification of the surface tested including manufacturer's reference, type and depth of supporting layers, and method of attachment and previous history;
- d) physical characteristics determined, with their values before and after ageing, and, if required, their percentage change, calculated in accordance with Clause 8;
- e) individual test results, if required.

