

Surfaces for sports areas - Determination of vertical ball behaviour

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12235:2013 sisaldab Euroopa standardi FprEN 12235:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 12235:2013 consists of the English text of the European standard FprEN 12235:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.09.2013.	Date of Availability of the European standard is 04.09.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 97.220.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Surfaces for sports areas - Determination of vertical ball behaviour

Sols sportifs - Détermination du comportement en rebond
vertical de la balle/du ballon

Sportböden - Bestimmung der Ballreflexion

This European Standard was approved by CEN on 11 July 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Principle.....	4
4 Apparatus.....	4
5 Sports surface for testing.....	5
6 Conditioning.....	5
7 Procedure.....	5
7.1 Determination of the rebound height of the ball from concrete.....	5
7.2 Determination of the rebound height of the sports surface.....	6
8 Expression of results.....	6
9 Test report.....	6

Foreword

This document (EN 12235:2013) 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 March 2014, and conflicting national standards shall be withdrawn at the latest by March 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 12235:2004.

Compared with EN 12235:2004, the text has been clarified and editorial errors have been corrected.

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 method for determining the rebound height of a ball from a surface, when dropped vertically.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12229, *Surfaces for sports areas — Procedure for the preparation of synthetic turf and needle-punch test pieces*

3 Principle

A ball is allowed to fall vertically onto a surface and the height to which it rebounds is measured and calculated as the percentage rebound height.

4 Apparatus

4.1 Ball, conforming to the regulations of the governing body of the relevant sport and with any additional requirements given in Table 1.

NOTE These requirements have been found to be acceptable in use, and it has not been found necessary to specify additional requirements such as circumference or mass of the ball.

Table 1 — Properties of balls

Type of ball	Drop height (m) ^d	Rebound height from concrete ^{c, d} (m)	K_1 ^a (s)	Additional requirements
Basketball	1,80 ± 0,01	1,050 ± 0,025	0,025	Use a men's nylon wound basketball. Conform to FIBA requirements
Association football ^b	2,00 ± 0,01	1,350 ± 0,05	0,025	Conform to FIFA requirements
Tennis ball	2,54 ± 0,01	1,400 ± 0,025	0,005	Conform to ITF requirements
Hockey ball	2,00 ± 0,01	0,640 ± 0,025	0,038	Conform to FIH requirements
^a K_1 is an empirically determined correction factor. ^b The precision of the test using footballs is ± 10 % absolute. ^c The rebound height from concrete is measured as described in 7.1 to determine if the ball is suitable for tests on the test piece. ^d The drop height and rebound height should always be measured from the bottom of the ball.				