

# SVENSK STANDARD

## SS-EN 12235:2013



Fastställt/Approved: 2013-09-10  
Publicerad/Published: 2013-09-11  
Utgåva/Edition: 2  
Språk/Language: engelska/English  
ICS: 97.150; 97.220.10; 97.220.99

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### **; c`j a UhfJU`È Sportbeläggningar – Bestämning av vertikal bollstuds**

### **Surfaces for sports areas – Determination of vertical ball behaviour**

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Denna standard ersätter SS-EN 12235:2004, utgåva 1 och SS-EN 12235:2004/AC:2010, utgåva 1.

The European Standard EN 12235:2013 has the status of a Swedish Standard. This document contains the official version of EN 12235:2013.

This standard supersedes the Swedish Standard SS-EN 12235:2004, edition 1 and SS-EN 12235:2004/AC:2010, edition 1.

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EUROPEAN STANDARD

**EN 12235**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2013

ICS 97.220.10

Supersedes EN 12235:2004

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.

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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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## **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of an identical text or by endorsement, at the latest by March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

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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.

## SS-EN 12235:2013 (E)

### 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) <sup>d</sup>	Rebound height from concrete <sup>c, d</sup> (m)	$K_1$ <sup>a</sup> (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 <sup>b</sup>	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

<sup>a</sup>  $K_1$  is an empirically determined correction factor.

<sup>b</sup> The precision of the test using footballs is ± 10 % absolute.

<sup>c</sup> 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.

<sup>d</sup> The drop height and rebound height should always be measured from the bottom of the ball.