

**Surfaces for sports areas - Determination of water  
infiltration rate**

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English Version

## Surfaces for sports areas - Determination of water infiltration rate

Sols sportifs - Détermination de la vitesse d'infiltration de l'eau

Sportböden - Bestimmung der Wasserinfiltrationsrate

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 12616:2013) 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of an identical text or by endorsement, at the latest by March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.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 12616:2003.

Compared with EN 12616:2003, the text has been clarified and editorial errors have been corrected.

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## 1 Scope

This European Standard specifies three methods for the determination of water infiltration rate. Method A is suitable for synthetic, textile, synthetic turf and bound mineral sports surfaces, Method B is suitable for natural turf and Method C is suitable for unbound mineral sports surfaces.

NOTE For filled synthetic turf and unbound mineral surfaces, laboratory tests are considered to give a more precise indication of how a surface will perform.

## 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

Water is ponded within two concentric cylinders that have been sealed onto or hammered into the sports surface. The outer cylinder is used as a buffer area to prevent the lateral flow of water from the inner cylinder.

NOTE A single cylinder can be used if the test piece is fully sealed to prevent lateral flow of water.

The rate of entry into the sports surface from the inner cylinder is measured.

## 4 Apparatus

**4.1 Infiltrometer**, with dimensions specified in 4.1.1, 4.1.2 and 4.1.3, consisting of one or two metal cylinders (see Figure 1) capable of being sealed onto, or hammered perpendicularly into, the sports surface, as appropriate to minimise lateral leakage.

**4.1.1 Large cylinder, double-ring infiltrometer**, for tests on synthetic turf and synthetic surfaces and mineral and natural turf surfaces with a rate of water infiltration less than 500 mm/h, consisting of an inner cylinder of inner diameter  $(300 \pm 5)$  mm forming the measurement area and an outer cylinder of inner diameter  $(500 \pm 25)$  mm forming the buffer area to prevent the lateral flow of water from the inner cylinder.

A wide tolerance on the cylinder diameter is permitted to allow the cylinders to be stacked for ease of transport.

**4.1.2 Small cylinder, double-ring infiltrometer**, for tests on mineral surfaces with a rate of water infiltration greater than 500 mm/h and where the available water supply is limited, consisting of an inner cylinder of inner diameter  $(150 \pm 5)$  mm and an outer cylinder of diameter  $(300 \pm 25)$  mm.

**4.1.3 Single ring infiltrometer**, in cases where the test piece can be fully sealed to prevent lateral flow of water, e.g. when measuring the rate of water infiltration in the laboratory, consisting of a single cylinder of dimensions conforming to the inner cylinder dimensions of 4.1.1 or 4.1.2.