

**Soil quality - Determination of dry bulk density (ISO 11272:1998)**

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## EESTI STANDARDI EESSÕNA

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ICS 13.080.20

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ICS 13.080.20

English Version

## Soil quality - Determination of dry bulk density (ISO 11272:1998)

Qualité du sol - Détermination de la masse volumique  
apparente sèche (ISO 11272:1998)

Bodenbeschaffenheit - Bestimmung der Trockenrohddichte  
(ISO 11272:1998)

This European Standard was approved by CEN on 13 March 2014.

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## Foreword

The text of ISO 11272:1998 has been prepared by Technical Committee ISO/TC 190 "Soil quality" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 11272:2014 by Technical Committee CEN/TC 345 "Characterization of soils" the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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### Endorsement notice

The text of ISO 11272:1998 has been approved by CEN as EN ISO 11272:2014 without any modification.

## Contents

<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative reference</b> .....	<b>1</b>
<b>3 Definition</b> .....	<b>1</b>
<b>4 Test procedure</b> .....	<b>1</b>
<b>4.4.1 Core method</b> .....	<b>1</b>
<b>4.4.2 Excavation method</b> .....	<b>3</b>
<b>4.4.3 Clod method</b> .....	<b>6</b>
<b>5 Test report</b> .....	<b>8</b>
<b>Annex A (informative) Alternative methods for determination of volume of excavated soil</b> .....	<b>9</b>
<b>Annex B (informative) Bibliography</b> .....	<b>10</b>

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Printed in Switzerland

## **Introduction**

The dry bulk density is used together with the particle density (see ISO 11508) for the calculation of the solids content and porosity of soil for the evaluation of soil structure, and conversion of concentrations of substances in soil from mass/volume to mass/mass and vice versa.

# Soil quality — Determination of dry bulk density

## 1 Scope

This International Standard describes three methods for the determination of dry bulk density of soils calculated from the mass and the volume of a soil sample. The methods involve drying and weighing a soil sample, the volume of which is either known (core method, see 4.1) or has to be determined (excavation method, see 4.2, and clod method, see 4.3).

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10381-1: –<sup>1</sup>, Soil quality — Sampling — Part 1: Guidance on the design of sampling programmes.

## 3 Definition

For the purposes of this International Standard, the following definition applies.

### 3.1 dry bulk density

Ratio of the oven-dry mass of the solids to the volume of the soil.

NOTE 1 The bulk volume includes the volume of the solids and of the pore space.

NOTE 2 The preferred SI unit of measurement is kilograms per cubic metre ( $\text{kg} \cdot \text{m}^{-3}$ ) but grams per cubic centimetre ( $\text{g} \cdot \text{cm}^{-3}$ ) is also very common. Note that  $x \text{ g} \cdot \text{cm}^{-3} = 1000 x \text{ kg} \cdot \text{m}^{-3}$ .

## 4 Test procedure

### 4.1 Core method

#### 4.1.1 Principle

This method is applicable to stoneless and slightly stony soils. Core samples of known volume are taken with a metal sampling tool. The sample is dried in an oven, weighed and the dry bulk density is calculated.

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<sup>1</sup> To be published.